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### From a teacher-oriented to a learner-oriented approach to teaching

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# FROM A TEACHER-ORIENTED TO A LEARNER-ORIENTED APPROACH TO TEACHING

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The role of teachers'  
collective learning processes

HANNEKE ASSEN

From a teacher-oriented to a learner-oriented approach to teaching:  
The role of teachers' collective learning processes

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# From a teacher-oriented to a learner-oriented approach to teaching:

The role of teachers' collective  
learning processes

Proefschrift ter verkrijging van de graad van doctor  
aan Tilburg University  
op gezag van de rector magnificus prof. dr. E. H. L. Aarts  
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Prof. Dr. H. G. Schmidt

**Voor Ate, mijn rots in de branding**





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More than 25 years ago I encountered problem-based learning (PBL). And, although I believe in this educational approach, I concede that even after 25 years of experiences as a PBL teacher, I struggle with applying interventions during the PBL process. I noticed that other teachers dealt with the same issues and that we hardly discuss with each other our beliefs about teaching and learning and our teaching behaviour. This insight became the starting point for my PhD research and is what motivated me to study this topic.

Writing a PhD dissertation is a long and isolated learning process, which requires a lot of endurance. Sometimes it felt like a never-ending journey. Nevertheless, I enjoyed it. I also know that it was not possible to do it on my own. Indeed, I experienced during this PhD journey that learning is a collective process and therefore, I would like to thank all the people who were involved, and helped me to reach the finish line. These people all contributed in their own way.

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January 2018



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# 1. Teachers' experiences with a learner-oriented approach to teaching: An introduction

## 1.1 Introduction

*The teacher took care that every student felt comfortable during problem-based learning sessions. The teacher was really involved and supported us in understanding the steps we needed to take in problem-based learning and he played an important role in showing us how to ask questions and how to be critical about the input of other students. He gave us the opportunity to use all information we found and to discuss our findings (Matz, second year International Hotel Management student, male, 20).*

*In the second module of this academic year, we had a teacher who gave us no space to find our own solution for the problem scenario. The only solution he approved was mentioned in his manual. If we did not give the right solution, he mentioned and explained what was written in the manual. Consequently, the teacher took over the session and was just talking and talking about the subject. This was very frustrating and this wasn't what we expected from problem-based learning (Diana, first year International Hotel Management student, female, 19).*

The above quotes are from students' reflection reports who are enrolled in an international hotel management programme at a University of Applied Sciences in the Netherlands. This university implemented a problem-based learning (PBL) curriculum in which teachers are expected to facilitate the students' learning process. The teacher in the first quote, indeed, facilitates students to construct knowledge based on their own findings. He asks questions to encourage students to discuss the findings. In addition, this teacher enables students to voice their own views and ideas. The teacher in the second description, however, does not facilitate the students' learning process. Instead of giving students space to construct knowledge collaboratively, this teacher determines which knowledge is needed for a single 'right' solution to a given problem scenario. Moreover,

he transmits knowledge and directs the students' learning process. These two teachers show different teaching styles. The first teacher uses a supportive teaching style while the style of the second teacher is directive. It appears that the second teacher finds it hard to use a supportive teaching style. This is in line with previous research findings, which show that teachers experience the supportive role as a major challenge (Bakkenes, Vermunt, & Wubbels, 2009; Windschitl, 2002). Since various universities have developed or have the intention of developing learning environments in which teachers are required to change their approach to teaching from directive to supportive (Loyens & Gijbels, 2008) this dissertation aims *to gain insight into how teachers can be facilitated in moving towards a supportive teaching style*.

## 1.2 Background of the study

Today's continually changing society requires employees "who can think creatively, adapt, be flexible to new work demands, identify as well as solve problem scenarios, and create complex products in collaboration with others" (Windschitl, 2002, p. 135). In other words, contemporary society asks for independent workers who engage in lifelong learning and have analytical, conceptual, creative, collaborative and interpersonal competencies (Dochy, Segers, Van den Bossche, & Gijbels, 2003; Hoekstra, Brekelmans, Beijaard, & Korthagen, 2009). Universities are challenged to design learning environments that support students to develop these competencies (Onderwijsraad, 2011; Van der Bruggen, 2007). According to Kuijpers, Meijers and Gundy (2011) these learning environments should be practice, dialogue and question driven where real-life experiences are starting points for students' learning.

Problem-based learning (PBL) is an example of such a learning environment (Meirink, Meijers, Verloop, & Bergen, 2009) and ideally supports students in developing the necessary competencies to position themselves in a rapidly changing society. PBL was first introduced in the medical education programme at McMaster University in Canada more than forty years ago. The university introduced PBL because traditional approaches to teaching failed to provide students with a professional setting for the content of their studies and to help students to put theory into practice (Barrows, 1994). Since students need to have practice-based skills for their future professions, a curriculum was developed in which students would be engaged in learning by using real-life problem

scenarios and in which theory and practice would be intertwined (Barrows & Tamblyn, 1980; Boud, 1985). Soon other universities and other programmes, other than medical education programmes in various countries, adopted PBL (Taylor & Mifflin, 2008).

PBL is an approach to learning based on self-directed, constructive, contextual and collaborative learning principles (Dolmans, De Grave, Wolfhagen & Van der Vleuten, 2005; Hmelo-Silver & Barrows, 2006; Schmidt, Van der Arend, Moust, Kokx, & Boon, 2009). Incorporating these principles in the curriculum is intended to enable students to become:

- Self-directed learners who are capable of taking responsibility for their own learning process as involved and active knowledge-acquiring stakeholders (Oolbekkink-Marchand, Van Driel, & Verloop, 2006).
- Contextual learners who face real-life problem scenarios derived from the professional work context. Throughout the process, students relate their learning to the problem and the related work field. These real-life problems are the foundation for inquiry and knowledge construction (Dolmans et al., 2005; Savery, 2006; Savin-Baden, 2007).
- Constructive learners who create knowledge by solving ill-structured problems. A characteristic of an ill-structured problem is that multiple solutions are possible and that these solutions are not limited to one discipline, but can be found across disciplines (Barrows, 1994; Boud, 1985; Savery, 2006). Students are challenged to activate and elaborate their prior knowledge and experiences about the problem, to identify knowledge gaps, to make connections between old and new concepts and to elaborate on the relationships between the concepts with the goal to 'build' knowledge. The focus of the constructive learner is on the learning process and on knowledge construction (Boud, 1985).
- Collaborative learners who create knowledge together with other learners. Through dialogue students mirror their ideas to those of others and give meaning to the real-life problem scenarios collaboratively. Therefore, communication and interpersonal skills are important characteristics of PBL (Schmidt, Rotgans, & Yew, 2011; Van den Bossche, Gijssels, Segers, & Kirschner, 2006).

Universities introduced various types of PBL curricula ranging from ‘lecture-based PBL’ with well-structured complete cases and with an instructor-led level of self-directedness and ‘pure PBL’ with a full range of ill-structured problems and with complete self-directedness (Hung, 2011). In addition, Savin-Baden (2000) distinguished two learning environments: pure and hybrid PBL environments. In pure PBL, the students’ learning process is completely based on PBL. There are no lectures or workshops provided. In hybrid PBL, next to PBL sessions, lectures and workshops are scheduled to help students to solve real-life problem scenarios. Teachers in PBL are known as tutors.

The PhD research project took place at a University of Applied Sciences in the Netherlands that profiles itself as an international educational institution in which hybrid PBL plays a central role. This university strives to use ill-structured problems and to complete a full level of self-directedness during PBL sessions. Teachers are expected to apply a supportive instead of a directive teaching style. Teaching behaviour plays an important role in the quality of PBL (Hung, 2011; Zwaal & Otting, 2010). According to Ertmer (2005), teachers’ context influence teaching behaviour. This context depends upon a university’s vision of education, the way the university embeds its vision into the curriculum and expectations regarding the teacher role. To examine the teachers’ context this dissertation begins with a brief description of the ‘written PBL curriculum’ which was found in the documents of the university: written in the documents of the university, (based on the university’s institutional plan from 2013-2017) and of the ‘implemented PBL curriculum’; what is actually delivered by teachers (based on the university’s 2013 audit – in particular their self-reflection report). In addition, two educational advisors at the university were interviewed to gain more insight into the implemented curriculum.

### 1.2.1 *‘Written’ curriculum*

The university adopted a hybrid PBL approach and interprets PBL as a conceptual approach to the whole curriculum indicating that all learning methods, facilities and organisational structures within the university support PBL. The university describes PBL as a learning environment that stimulates students to take responsibility for their learning process and to construct knowledge collaboratively in a culturally diverse and socially supportive learning environment. Such an environment is an integral part of PBL because it enables students to mirror their knowledge and understanding against that of others from diverse cultural backgrounds. Students learn in and through participation in collaborative learning processes (Institutional plan 2013 – 2017).

Students work in small groups (max. 12 students) on thematic and interdisciplinary real-life problem scenarios derived from the work field they aim to work in later. They meet twice a week. Next to PBL session, lectures, workshops and skills training are scheduled to expand the knowledge and skills needed to solve the problem scenarios. In addition, the seven-step procedure is used to structure the PBL sessions. Students clarify concepts of the problem scenario (step 1), define the problem (step 2), analyse the problem by using various analysing techniques (step 3), systematic classify the problem (step 4) and formulate learning objectives (step 5). In step 6 students select and study sources and prepare their report (step 6). Finally, students discuss their findings with other students and solve the problem (step 7) (De Boer & Den Dulk, 2015; Institutional Plan 2013-2017).

The university describes the role of the teacher as a knowledge expert, as a learning facilitator and as a role model. The university emphasises the shift of the teacher role from knowledge transmitter to coach of the learning process. Unfortunately, a clear description of the PBL teacher role is not available. Only in the student manual to PBL, a description of the tutor role is included: “The tutor facilitates the group learning process and the quality of the content. He or she facilitates the evaluation and reflection of the group process and provides students with feedback regarding of the group process and individual contributions. Moreover, he or she ensures that students keep on track and stimulates the students’ critical thinking process” (De Boer & Den Dulk, 2015, p. 20).

### *1.2.2 ‘Implemented’ curriculum*

The university stresses that the quality of education will be recognised when the university ‘does what it promises’. Programme evaluations show that the intended quality of education has been realised. PBL is incorporated in the ‘DNA’ of all programmes (Self-reflection report, 2013). Although the university concludes that all programmes embrace PBL, it seems keeping PBL in the ‘DNA’ is problematic. A more detailed evaluation showed that programmes embed PBL in their curriculum in a variety of ways. Some programmes, for instance, provide lectures and workshops, which are not supportive to the problem scenarios and/or are not related to the PBL theme. In addition, the way students are enabled to direct their learning process varies. Some of the programmes give students a lot of space to direct their own learning process and stimulate students to find their own solutions to the problems. Yet, within other programmes teachers determine the ‘right’ solution and therefore direct the students’ learning process by embedding more traditional elements into the PBL curriculum (Interview educational advisors, July 1, 2013).

In the self-reflection report (2013), these changes are explained as a (internal and external) reaction to or criticism on ‘new’ learning approaches like PBL. For instance, studies on the development of the brain of young people demonstrated that they have difficulties with self-directed learning (Jolles et al., 2006). Specifically, novice students are not (yet) able to take responsibility for their own learning process. Consequently, the university decided that teachers should structure PBL sessions and organise the students’ learning processes (Institutional plan, 2013-2017). Specifically in the beginning of first year, the PBL tasks are more structured and the PBL process is more instructor-led (De Boer & Otting, 2011). Another criticism of teachers is that new approaches to learning lead to lack of basic knowledge. Teachers claim that PBL seems to not be applicable for learning basic skills and knowledge. For instance, some teachers of the disciplines economics or statistics are convinced that these disciplines cannot be learned using a PBL approach. Therefore, some programmes tend to schedule lectures and workshops, which are not related to the PBL theme and learning process (Interview educational advisors, July 1, 2013).

Teachers of this university appear to struggle with their teacher role in PBL. The two educational advisors observed that the way teachers should teach often conflicts with the way they actually teach. Even teachers who would like to teach according to the PBL principles show inconsistencies between these principles and teaching behaviour. They have difficulties applying facilitation strategies from a meta-cognitive level to stimulate students to become independent learners who construct knowledge collaboratively. It seems that teachers easily fall back on conventional learning strategies. They transmit knowledge and tell students in which direction they should find the solution for the real-life problem scenarios.

The incongruence between the ‘written curriculum’ and the ‘implemented curriculum’ might also be a cause of uncertainty to the PBL approach (Moust, Van Berkel, & Schmidt, 2005). Accordingly, teachers feel the difference between the ‘espoused theory’, the way PBL philosophy should be integrated in the curriculum according to the institutional documents, and the ‘theory in use’, the way PBL actually is embedded in the curriculum (Argyris & Schön, 1996). This can lead to expressions of ambivalence with regards to the PBL approach to teaching. Since an extensive description of tutor tasks is not available and teachers do not have a clear picture of their role in PBL, they may for this reason also tend to fall back on conventional teaching behaviours (Moust et al., 2005).



The following issues are important to investigate to gain more insight into why teachers struggle with their role in PBL. Firstly, are teachers conscious about their teaching behaviour and are they aware that their teaching behaviour is not consistent with the PBL approach to teaching? Secondly, why do teachers struggle with a supportive style? Thirdly, do teachers have a dialogue about their teaching practices with other teachers and do they learn from each other? Finally, what do teachers need to move to a supportive teaching style?

The central goal of this research is to gain insight into how teachers can be facilitated in moving towards a supportive teaching style that is in line with the PBL vision on teaching. The type of learning environment, the way teachers think about teaching and learning (i.e. beliefs), the way teachers perceive the teacher role (i.e. teachers' professional identity) and the way they learn collaboratively are key concepts in developing teaching behaviour and are therefore key concepts of this dissertation.

## 1.3 Conceptual framework

### 1.3.1 *Teacher-oriented and learner-oriented learning environment*

In a teacher-oriented learning environment, teachers emphasise knowledge transmission and consider their role as 'a knowledge provider' (Meirink et al., 2009). Terms used in the literature that correspond with teacher-oriented learning environments are: 'Traditional-oriented' (Bolhuis, 2000), 'knowledge-transmission model' (De Kock, Slegers, & Voeten, 2004), 'lecture-driven education' (Hung, 2011), 'acquisition-based model of learning' (Patchen & Crawford, 2011), 'information/teacher-focused view of teaching' (Trigwell & Prosser, 2004) and 'traditional teaching' (Woolley, Benjamin, & Williams Woolley, 2004). Teacher-oriented learning environments focus on externally-directed, reproductive and individual learning (Hoekstra et al., 2009; Kuijpers et al., 2011). Consequently, students focus on memorisation of facts and reproduction of information. They learn in an abstract manner and are less able to see the relationship between theory and practice. Therefore, these environments are considered less suitable in supporting students to develop the needed competencies for the quickly changing professions (Collins, Brown, & Newman, 1989).

In a teacher-oriented approach to teaching, teachers take a directive role and perceive themselves as 'holders of truth' (Patchen & Crawford, 2011). They act as knowledge transmitters and process organisers. They explain the learning

content and structure the learning process (Dahlgren, Castensson, & Dahlgren, 1998). Teachers approach students as individual learners. In addition, in these learning environments students are not seen as independent learners who are able to influence their own learning process, instead they are perceived as 'passive received-knowers' (Patchen & Crawford, 2011).

In contrast, teachers in a learner-oriented learning environment (Meirink et al., 2009) are focused on students' knowledge construction whereby they take on the role of facilitator. In the literature, learner-oriented environments are also described as 'process-oriented teaching' (Bolhuis, 2000), 'knowledge-construction model' (De Kock et al., 2004), 'problem-driven education' (Hung, 2011), 'participation-based model' (Patchen & Crawford, 2011), 'conceptual change/student focused view of teaching' (Trigwell & Prosser, 2004) and 'constructivist teaching' (Woolley et al., 2004). A learner-oriented environment focuses on self-directed, constructive, contextual and collaborative learning (Dolmans et al., 2005; Meirink et al., 2009). These environments concentrate on the meaning of the content. They stimulate students to have a dialogue with others about real-life experiences and to construct knowledge collaboratively. Therefore, these learning environments prepare students for the competencies they need in current society.

In a learner-oriented approach, teachers take on a supportive teacher role and perceive themselves as a facilitator, activator and an observer of the students' learning process (Hattie, 2009). They encourage students to take responsibility for their knowledge construction and help students to evaluate their learning processes. Teachers in a learner-oriented environment are able to apply various facilitation strategies to support students (Bakkenes et al., 2009). They apply cognitive apprenticeship strategies, such as modelling, coaching, scaffolding, articulation, reflection and exploration, to encourage students to become active and independent learners (Collins et al., 1989). Teachers support students to articulate and explain their thinking processes by using a question-based approach (Aarnio, Lindblom-Ylänne, Nieminen, & Pyörälä, 2014; Maudsley, 2002). This questioning approach serves as a form of modelling (Hmelo-Silver & Barrows, 2006). Teachers demonstrate how to ask deep-approach questions. In this way students learn to ask questions without the support of the teacher. It is crucial that teachers ask questions at the 'right' time and give students space to answer these questions (Neville, 1999). Moreover, the deep-approach questions stimulate students to reflect on their learning process and encourage students to explore new viewpoints with the goal of constructing knowledge

collaboratively. When needed, teachers use supportive scaffolding (Collins et al., 1989; Williams, 2011).

Students in a learner-oriented approach are seen as ‘constructed knowers’ (Patchen & Crawford, 2011) and are more likely to be engaged in higher-order learning (Trigwell & Prosser, 2004). Students are expected to act as independent learners who take responsibility for their learning process (Bolhuis & Voeten, 2001). They construct knowledge by activating prior knowledge, identifying knowledge gaps, making connections between old and new concepts, elaborating on relationships and relating their knowledge to the work field. Moreover, they learn in and through groups, through dialogue and mirror their own perspectives to those of others. Taken together, in a learner-oriented approach to teaching, knowledge is a result of a learning process in which students are active learners who construct knowledge collaboratively.

It is important to keep in mind that learning environments are often positioned using a categorical approach (Ruscio, Ruscio, & Carney, 2011), however, the majority of learning environments are in between teacher-oriented and learner-oriented and the majority of the teachers show both learner-oriented and teacher-oriented behaviour (Uiboleht, Karm, & Postareff, 2016). Table 1.1 shows an overview of the differences between the teacher-oriented and learner-oriented approach to teaching.

**Table 1.1. Overview Teacher-oriented and Learner-oriented Approach to Teaching**

	Teacher-oriented approach	Learner-oriented approach
Learning principles	Externally-directed learning Reproductive learning Individual learning	Self-directed learning Constructive/contextual learning Collaborative learning
Teaching style	Directive teaching style	Supportive teaching style
Teacher role	Knowledge expert Knowledge transmitter Organiser	Facilitator Activator Observer
Student role	Passive knowledge receiver	Active knowledge constructor

Since the description of a learner-oriented approach to teaching is based on the four PBL learning principles (self-directed, constructive, contextual and collaborative learning) this dissertation uses the terms learner-oriented versus teacher-oriented to categorise learning environments, teacher beliefs and teaching behaviour. The term learner-oriented instead of student-oriented is used

to stress the importance of life-long learning, analytical, collaborative, self-directed and interpersonal competencies both for students and employees in the work field. Self-directive, constructive and collaborative learning are important in and outside the educational system. In addition, in this dissertation, the role of the teacher is often described as observer and/or facilitator, however it is important to keep in mind that this description includes the role of activator. Teachers are supportive in activating students' learning processes.

### *1.3.2 Teacher beliefs and teaching behaviour*

The teacher role in teacher-oriented and learner-oriented approaches to teaching differs. Previous research showed that most teachers struggle with learner-oriented behaviour and tend to fall back on teacher-oriented behaviour (Donche, 2005; Meirink et al., 2009; Oolbekking-Marchand, Van Driel, & Verloop, 2006; Postareff, Lindblom-Ylänne, & Nevgi, 2007; Windschitl, 2002). It appears that the shift from a teacher-oriented to a learner-oriented approach to teaching is not an easy process. The shift from a directive to a supportive role involves more than changing the teaching style. It requires a change in teachers' 'mode of thinking' (Postareff et al., 2007).

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The way teachers think about teaching and learning is indeed a "powerful moderator" (Hattie, 2009, p.127) for teaching behaviour (Bolhuis & Voeten, 2007; Donche, 2005; Oolbekking-Marchand et al., 2006). In this dissertation, a distinction is made between conventional or teacher-oriented beliefs and process- or learner-oriented beliefs (Bolhuis & Voeten, 2007; Hoekstra et al., 2009; Meirink et al., 2007; 2009; Woolley et al., 2004). Teacher-oriented beliefs include subject matter knowledge, knowledge reproduction and individual learning, while learner-oriented beliefs are related to students' learning processes, knowledge construction and collaborative learning.

Even teachers who explicitly agree with learner-oriented beliefs show predominantly teacher-oriented behaviour (Hung, 2011; Windschitl, 2002). Teachers experience difficulties in transforming their beliefs about teaching and learning into actual teaching behaviour. Explanations for the discrepancy between beliefs and behaviour might be that teachers are not conscious about their beliefs. Moreover, teacher beliefs could be peripheral instead of central beliefs (Haney & McArthur, 2002). Central beliefs are stable, difficult to change and are incorporated in teaching behaviour. Peripheral beliefs are beliefs that are aligned with the chosen approach to teaching but are not integrated into the teaching behaviour. In addition, not only teachers' beliefs predict teaching

behaviour but also influenced by external factors (Ertmer, 2005). For instance, the way that curriculum is organised and the way assessment is done, also have an impact on teaching behaviour.

### *1.3.3 Teacher professional identity*

As discussed, a shift from teacher-oriented behaviour to learner-oriented behaviour requires more than a change in beliefs about teaching and learning (Meirink et al., 2009). The development of teacher professional identity is crucial for teaching behaviour. Teacher professional identity is defined as “how teachers position themselves from inside out in a social construct” (Vandamme, 2014, p.51). According to Dialogical Self Theory (DST) an identity consists of a multiplicity of I-positions in the landscape of the mind (Hermans & Hermans-Konopka, 2010). Applied to teacher professional identity, I-positions consist of internal voices of the teacher as well as the external voices of others (Vloet, 2015). Through a dialogue between the various I-positions, teachers are able to change and adjust their I-positions (Beijaard, Meijer & Verloop, 2004) and to develop a new teacher professional identity (Hermans & Hermans-Konopka, 2010).

An internal dialogue often starts with a so-called boundary experience: an experience whereby an individual encounters the boundaries of his or her existing self-concept and cannot cope with a situation and its exigencies (Meijers & Wardekker, 2002). One hits the proverbial wall and one’s sense of identity is challenged, diminished or even lost and this results in the inability to act with confidence. Challenging experiences are in fact needed to activate teachers to question, change and develop new teacher identities (Meijers & Lengelle, 2012). An external dialogue is needed to enable teachers to de-position (leave a position) and/or re-position (assume another position) to overcome and integrate boundary experiences (Vandamme, 2014). In fact, the quality of the internal dialogue depends to a large degree on the quality of the external dialogue.

The aim of the dialogue (both in- and external) is to work towards a more empowering perspective or moving from a ‘first story’ to a ‘second story’. This may include a shift in perspective, acceptance, or meaning constructed (Lengelle, 2016). Second stories may serve for a time (i.e. until the next boundary experience) and then eventually feel like ‘first stories’ again. Indeed they are stepping stones in a narrative that is ever-evolving. The difference between the ‘first and second stories’ is not absolute – the ‘second story’ does not represent the creation of a completely different identity, but is rather the expression of an evolving identity.

### 1.3.4 *Collective learning*

An external dialogue is a crucial factor in encouraging teachers to develop their professional identity (Lengelle, 2016). An external dialogue is similar to and can be defined as a collective learning process in which teachers make sense of their beliefs and their teaching experiences (Lodders, 2013). Lodders (2013) identified shared vision, dialogue and inquiry, collective action and evaluation and reflection as factors of the collective learning process. A shared vision on teaching approaches creates mutual understanding among teachers and leads teachers in a particular direction. Dialogue and inquiry help teachers to gain insight into ideas and perspectives of all their team members and supports teachers in taking collective action. The last factor, evaluation and reflection, refers to team members who reflect on the collective processes and actions.

In general, research showed a lack of collective learning at universities (Vangrieken, Dochy, Raes & Kyndt, 2015). One of the reasons for the absence of collective learning is that “for most teachers teaching is a private matter; it occurs behind the closed classroom door, and is rarely questioned and challenged” (Hattie, 2009, p.1). The individual character of the teachers’ job enables each teacher to keep their own teaching behaviour even when this behaviour is not congruent with the university’s proclaimed approach to teaching. This is known as ‘the pocket veto of teachers’ (Caluwe & Vermaak, 2006). Since teachers predominantly interpret and re-interpret their beliefs individually, and rarely have a dialogue about their (boundary) experiences, collective beliefs that drive a university’s approach to teaching remain unspecified and unexamined (Windschitl, 2002). Consequently, teachers at the same university have different teaching behaviours. To align teaching behaviour with a university’s approach to teaching, teachers must be supported in reflecting on their beliefs and behaviours (Trigwell & Prosser, 2004).

## 1.4 Focus and relevance of the research

Many universities have developed or have the intention to develop learner-oriented curricula. This dissertation aims to contribute to the growing interest in collective learning and teachers’ professional identity development. Therefore, the present PhD research project explores how teachers can be supported in developing their professional identity, which helps them to move to learner-oriented teaching behaviour. Since teacher beliefs and teaching behaviour are seen as indicators for teacher professional identity, this study explores the relationships between beliefs, behaviour and collective learning.

Previous studies showed contradictory findings about the impact of teacher beliefs on teaching behaviour (Bolhuis & Voeten, 2007; Donche, 2005; Hoekstra et al., 2009; Kim, Kim, Lee, Spector, & DeMeester, 2013). One of the explanations for these contradictory findings is that questionnaires and self-reports are used to identify teacher beliefs and behaviour (Boelens, Wever, Rosseel, Verstraete & Derese, 2015; Bolhuis & Voeten, 2007; Dolmans et al., 2002; Meirink et al., 2009; Zwaal & Otting, 2010). For this research an observation instrument was developed to observe, categorise and compare teacher beliefs about teaching and learning and interventions during PBL sessions. These categories make it possible to distinguish teacher- and learner-oriented interventions and to compare teacher beliefs with teaching behaviour. In addition, teachers are able to use this observation instrument without support from the researcher. The observation instrument might help them to become aware of their beliefs and behaviour and can be used as a starting point for a dialogue about their teaching experiences.

Although previous research recognises the crucial role of teachers in PBL, little is known about the ‘lived experiences’ of teachers. Far too little attention has been paid to the ‘voices of teachers’ (Savin-Baden, 2000). Therefore, narratives will be used to explore teachers’ voices in their professional identity development. Narratives provide better insight into how teachers learn collaboratively and how they develop their identities (Meijers & Lengelle, 2012). This research uses Dialogical Self Theory (DST) to gain insight into how teachers develop their identity and how a teacher gives meaning to his or her teaching experiences (Hermans & Hermans-Konopka, 2010). DST gives an appropriate understanding as to how teachers can be supported in moving towards learner-oriented teaching behaviour. This study also aims to investigate how teachers evaluate external factors that influence their teaching behaviour differently (Ertmer, 2005). Therefore, this dissertation might offer insights into how teachers reflect on these external factors.

## 1.5 Outline of the research

The main purpose of this dissertation is *to explore to what extent teachers can be facilitated in moving towards a learner-oriented approach to teaching*. Other aims of this dissertation are to explore the discrepancy between teacher beliefs and teaching behaviour, to explore the extent collective learning supports teachers in moving from a teacher-oriented towards a learner-oriented approach to teaching, to explore the relationship between collective learning, teacher beliefs

and teaching behaviour and the relationship between the dialogue and teacher professional identity development.

The dissertation consists of four studies, which are presented in chapters two to five. In chapter six a summary of main findings, conclusions, limitations and recommendations of the four studies are discussed.

### *1.5.1 Context*

This study takes place at a University of Applied Sciences in the Netherlands. This university adopted a hybrid PBL curriculum approach more than 25 years ago. Four programmes are involved in the research: Hotel Management (HM), Tourism management (TM), Social Work (SW) and the Teacher Education for Primary Schools (PS).

### *1.5.2 Objectives of the studies*

This dissertation sets out the following studies and objectives:

- The focus of the first study is teaching behaviour. This study investigates to what extent teacher interventions in PBL sessions are in line with the learner-oriented approach envisioned in PBL teaching.
- The second study compares teacher beliefs and teaching behaviour and explores the discrepancy between teacher beliefs and teacher interventions in the PBL environment.
- Since collective learning is often regarded as a possible influence on teacher beliefs and teaching behaviour, the third study investigates the relation between perceived collective learning, teacher beliefs and teaching behaviour.
- The fourth study explores to what extent collective learning (i.e. dialogue), supports teachers' professional identity development and to what extent it supports teachers in making a shift towards a learner-oriented approach to teaching.



### 1.5.3 Research design, methods and participants

The overall design of this research can be considered a mixed-methods design (Creswell, 2014). The research uses quantitative and qualitative methods to provide a better understanding of teacher beliefs, teacher behaviour and the way collective learning supports teachers in developing their teachers' identity towards a learner-oriented approach to teaching. This research uses questionnaires to measure teachers' self-perceptions about teaching and learning and perceived collective learning, and uses case studies, observations, interviews and narratives to explore teacher beliefs, behaviours and perceived collective learning. Participants in study one, two and four are HM teachers and participants in study three are teachers from the two management programmes: Hospitality Management (HM) and Tourism Management (TM) and teachers from the two social-educational programmes: Social Work (SW) and Teacher Education for Primary Schools (PS). Table 1.2 provides an overview of the data collection methods and participants per study and per method.

**Table 1.2. Data Collection Methods and Participants per Study and per Method**

Study 1		Study 2		Study 3		Study 4	
Method	Partici- pants	Method	Partici- pants	Method	Partici- pants	Method	Partici- pants
Observa- tion PBL 1 session	HM teachers	Survey 'Beliefs about teach- ing and learning"	HM teachers	Survey 'Beliefs about teach- ing and learning" Survey 'Col- lective Learning'	HM, TM SW, PS teachers	Obser- vation two PBL sessions: one before and one after the collective meet- ings.	HM teachers
		Observa- tion PBL sessions	HM teachers	Observa- tion PBL sessions	HM, TM SW, PS teachers	Observa- tion six collective meetings	HM teachers
		Interview	HM teachers				HM teachers

#### 1.5.4 *Overview of the studies*

##### **Study 1: Teacher interventions in a problem-based hospitality management programme**

The aim of the first study is to explore to what extent teacher interventions during PBL sessions are in line with the learner-oriented approach to teaching. This case study takes place at the HM programme and structured observations will be used to identify the number and nature of teacher interventions of seven teachers during one of their PBL sessions. For this purpose, the PBL sessions are divided into a starting, main and evaluation phase. Interventions are classified as teacher- or learner-oriented interventions.

The following questions are addressed: (1) How often do teachers intervene during PBL? (2) Are these interventions teacher-oriented or learner-oriented? (3) Which teaching style (supportive or directive) do teachers prefer when guiding the learning process and/or guiding the construction of knowledge (content)? (4) Who takes the initiative during the starting and evaluation phase? (5) Who takes responsibility for the learning process, students or teachers? This study uses a newly developed observation instrument to identify and categorise teacher interventions during PBL. The observation categories are divided into two teacher-oriented (content instructor and process organiser) and two learner-oriented (content activator and process observer) categories.

##### **Study 2: Explaining the discrepancy between teacher beliefs and teacher interventions in a problem-based learning environment: A mixed method study**

This mixed-method study takes place at the HM programme. The study compares teacher beliefs about teaching and learning and teaching behaviour to determine whether there is a gap and explains the gap between beliefs and behaviour. Firstly, this study uses the questionnaire 'Beliefs about teaching and learning' to identify the beliefs of HM teachers (Meirink et al., 2009). This questionnaire distinguishes teacher-oriented and learner-oriented beliefs. Secondly, this study uses four observation categories to determine teaching behaviour during PBL sessions. To compare the beliefs with behaviour, the items in the questionnaire and the observation categories are divided into two teacher-oriented: content instructor, process organiser and two learner-oriented: content activator and process observer. Thirdly, this study uses interviews to explain the discrepancy between beliefs and behaviour and to gain more insight into how teachers experience and perceive their teacher role in PBL.

This study aims to address the following questions: (1) Do teachers agree more with teacher-oriented or learner-oriented principles? (2) Do teachers apply more teacher-oriented or learner-oriented interventions? (3) Is there a discrepancy between teacher beliefs and teaching behaviour? (4) Why is there a discrepancy between beliefs and behaviour and (5) Which factors influence teaching behaviour?

### **Study 3: Collective learning, teacher beliefs and teaching behaviour in management and social educational studies.**

Study three investigates whether teachers perceive that collective learning is taking place in their programme team and whether collective learning relates positively with learner-oriented beliefs and behaviour. In addition, this study examines whether a higher level of collective learning leads to more similarity in beliefs and behaviour and whether collective learning can reduce the gap between beliefs and behaviour. This explanatory and comparative study took place in four programmes, two management programmes, HM and TM, and two social-educational programmes, SW and PS.

Since previous studies showed that there is a relationship within collective learning between teachers' learner-oriented beliefs and teaching behaviour (Postareff et al., 2007), this study addresses the following questions: (1) Are there significant differences between beliefs and behaviour of management teacher or social-educational teachers? (2) Is there a discrepancy between beliefs and behaviour in both programmes? (3) Does collective learning correlate positively with learner-oriented beliefs and with learner-oriented behaviour? (4) What are the similarities in teacher beliefs and teaching behaviour among the observed teachers? (5) Does collective learning correlate with the discrepancy between beliefs and behaviour? And can collective learning reduce the discrepancy between beliefs and behaviour?

This study uses two questionnaires, firstly the questionnaire 'Beliefs about teaching and learning' (Meirink et al., 2009) to investigate teacher beliefs and secondly the 'Collective learning questionnaire' (Lodders, 2013) to identify to what extent teachers perceive collective learning in their programme. This study also uses the four tutor observation categories to classify teaching behaviour.

**Study 4: How can a dialogue support teachers’ professional identity development? Harmonising multiple teacher I-positions.**

The purpose of the fourth study is to explore to what extent dialogue supports teachers in developing their professional identity. In this narrative study, four HM teachers share their personal experiences and stories during collective meetings and during two individual interviews. The conversations during these collective meetings are based on the four factors of collective learning identified by Lodders (2013). In addition, the study uses observations to compare teaching behaviour before the collective meetings and after the collective meetings. The individual stories of the four participating teachers will be presented as case studies. These case studies describe chronologically the I-positions, boundary experiences, external/internal barriers, meta-positions and promoter positions that teachers expressed and developed (DST concepts).

The following questions will be examined: (1) How do teachers position themselves as teachers? (2) What kinds of I-positions do teachers use to describe themselves? (3) Do teachers (and how do teachers) reflect on boundary experiences? (4) Are teachers able to observe themselves and recognise linkages among the I-positions? (5) Do teachers explore and apply other and new behaviours? (6) Do teachers move towards learner-oriented behaviour? and finally, (7) What is the influence of the dialogue on teaching behaviour?

**Figure 1.1. Overview Relationships Four Studies**

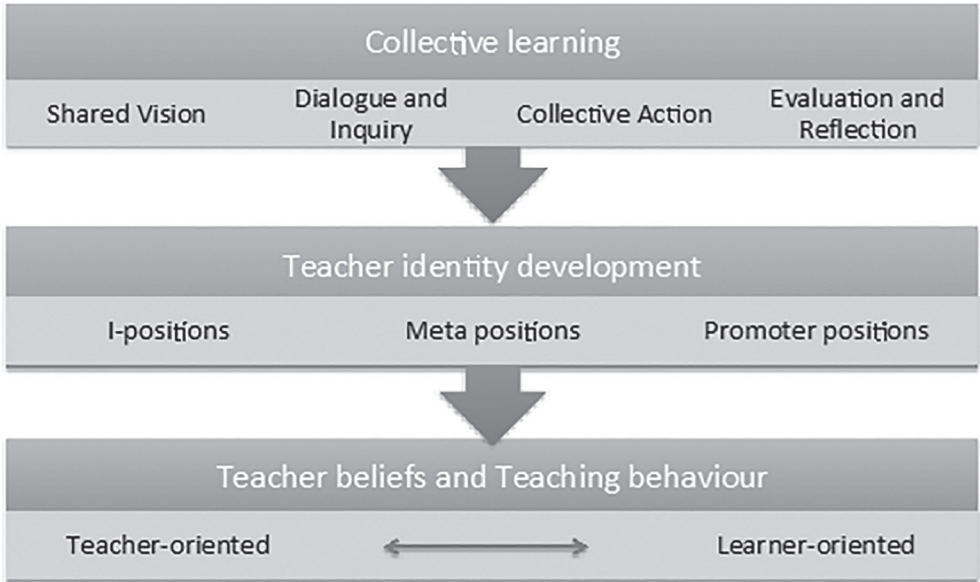


Figure 1.1 presents an overview and shows the relationships between the four studies.

In the last chapter of this research the main findings and conclusions are discussed. Teachers' beliefs about teaching and learning, teaching behaviour, teacher professional identity and collective learning are connected to answer the main research question: to gain insight how teachers can be supported in moving towards more learner-oriented teaching behaviour? This chapter also contains reflections on the findings of this research, followed by implications for practice and recommendations for universities who adopted or have the intention of adopting a learner-oriented approach to teaching.



## 2. Teacher interventions in a problem-based hospitality programme

This chapter has been published as:

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## Abstract

The purpose of this case study was to investigate to what extent tutor interventions in a problem-based learning environment are in line with a learner-oriented approach to teaching. Using extensive observations, this study demonstrated that the seven tutors in our sample apply predominantly teacher-oriented interventions. There was limited evidence that the seven tutors challenged and encouraged students to diagnose, monitor and evaluate their own learning strategies. The findings suggest that a number of actions need to be undertaken to stimulate tutors to apply more learner-oriented interventions. The developed observation instrument can support tutors to gain insight into their tutor interventions.



## 2.1 Introduction

To cope with the complex and rapid changes in their future profession, hotel management students should develop conceptual and analytical competencies (Otting, Zwaal, & Gijsselaers, 2009). Students have to acquire skills to apply various learning and thinking strategies to contribute to the development of innovative hospitality concepts (Association Dutch Hotel Management Schools, 2011). Next to these learning and thinking strategies, other competencies are required to be successful in the hospitality industry. Suh, West and Shin (2012) invited hospitality managers to rank the most important skills for future hospitality managers. Professional skills like listening, tolerance for change, openness to new ideas, personal integrity, interaction with superiors, peers and guests were ranked as most important.

The conventional teacher-oriented approaches to teaching are focused on knowledge transmission, on knowledge reproduction and on individual learning, which makes them less suitable for the development of competencies that hospitality students need in the 21<sup>st</sup> century (Otting et al., 2009). A learner-oriented approach to teaching seems more appropriate to support students to engage in a higher order of learning (Trigwell & Prosser, 2004). This approach to teaching focuses on self-directed learning skills, knowledge building and collaborative learning and enables students to integrate hospitality-specific knowledge building with various learning strategies (Bakkenes, Vermunt, & Wubbels, 2010; Chng, Yew & Schmidt, 2011; Hmelo-Silver & Barrows, 2008; Savery, 2006). Experiential, situated, inquiry-based, project-based, team-based and problem-based learning are examples within a learner-oriented approach to teaching (Valcke, 2010).

This study focuses on problem-based learning (PBL). PBL is an excellent example of a learner-oriented approach to teaching (Dolmans, De Grave, Wolhagen, & Van der Vleuten, 2005; Hmelo-Silver & Barrows, 2006) and stimulates the development of higher order learning and skills (Hung, 2015). The starting point of PBL is a real-life problem derived from the hospitality industry. Contextualisation of the problem enables students to link theory to practice (Zwaal & Otting, 2010). Students collaboratively analyse problems in small groups. They search for and use relevant information and critically evaluate this information with the goal to construct knowledge (Hmelo-Silver & Barrow, 2006). Students take the responsibility for their own individual and collaborative learning process. In addition to knowledge building about the problem content students also acquire

a range of interpersonal competencies. Students learn to listen to viewpoints, formulate their own opinion, improve their collaboration skills and develop themselves as independent learners. Schmidt, Van der Molen, Te Winkel, & Wijnen (2009) demonstrated that students from a PBL curriculum rated their own interpersonal skills, specifically, their communication and collaboration skills, higher than students from a conventional curriculum.

## 2.2 Literature review

### 2.2.1 *Learner-oriented teachers*

The teacher-oriented approach to teaching focuses on knowledge transfer, knowledge reproduction and individual learning (Bolhuis & Voeten, 2007; Hoekstra, Brekelmans, Beijaard, & Korthagen, 2009; Meirink, Meijer, Verloop, & Bergen, 2009). In this approach the teacher takes the directive role of information provider (Trigwell, Prosser, & Waterhouse, 1999). Contrary, the role of a teacher in a learner-oriented approach to teaching is guided by other learning principles: self-directed, constructive, contextual and collaborative learning (Bolhuis & Voeten, 2007; Dolmans et al., 2005; Hoekstra et al., 2009; Meirink et al., 2009). Teachers have a supportive role as facilitator, activator, diagnostician, challenger and evaluator (Hattie, 2009; Vermunt & Verloop, 1999). This implies that teachers are able to support students' self-directed learning by stimulating them to take responsibility for their own learning process. Teachers facilitate contextual learning by using real-life cases. Moreover, they support constructive learning by activating students' prior knowledge, by stimulating students to connect prior knowledge to new knowledge and by challenging students to construct new concepts (Hoekstra et al., 2009; Postareff, Lindblom-Ylänne & Nevgi, 2007; Trigwell & Prosser, 2004). Another important task of teachers is to stimulate and monitor students' collaborative learning process (Barrett & Moore, 2011; Chng et al., 2011; Lee, Lin, & Lin, 2013; Moust, Van Berkel, & Schmidt, 2005).

### 2.2.2 *Tutor interventions in Problem-Based Learning (PBL)*

The teacher in a problem-based learning is known as a tutor. Tutor interventions in a PBL session are of great importance because their verbal and non-verbal expressions influence the quality of the PBL process and are vital for the students' learning process (Aarnio, Lindblom-Ylänne, Nieminen & Pyörälä, 2014; Barrett & Moore, 2011; Chng et al., 2011; Hung, 2011; Zwaal & Otting, 2010). The tutor functions on a meta-cognitive level, stimulates the development of

students' domain-specific knowledge and supports the students' thinking and learning process (Bakkenes et al., 2009; Barrett & Moore, 2011). A tutor adds meaning to this learning process by asking open, relevant and critical questions (Schmidt, Rotgans & Yew, 2011; Williams, 2011). A questioning approach of the tutor activates students to explore concepts, stimulates students to link theory to practice, encourages students to explain their findings in their own words, supports students to give evidence for their findings and challenges students to analyse and compare the different aspects of concepts (Aarnio et al., 2014). Tutors act as a role model by using critical questions (Hmelo-Silver & Barrows, 2008). The goal of modelling questions is to scaffold students' learning process and to activate students to ask these questions themselves (Hmelo-Silver & Barrows, 2006). When using these questions themselves students improve their self-directed learning skills. Effective tutors give students sufficient time to answer their questions and support students to explore the problem (Williams, 2011). The biggest challenge for a tutor is the timing of the interventions: When and how should the tutor intervene in the learning process? (Maudsley, 2002; Moust et al., 2005; Williams, 2011). Both too many and too few interventions would interfere with the students' learning process. When the tutor intervenes too often it may frustrate self-directed learning and when the tutor refrains from intervening, students may feel lost (Neville, 1999).

### *2.2.3 Teacher professional identity*

Problem-based learning requires a change in a teachers' approach to teaching (Moust et al., 2005; Trigwell, 2011). Although many teachers endorse learner-oriented beliefs about teaching and learning, research shows that teachers often find it difficult to perform as a supportive teacher in a learner-oriented curriculum (Dolmans et al., 2005; Donche, 2005; Hendry, 2009; Hmelo-Silver & Barrows, 2006; Hung, 2011; Meirink et al., 2009; Oolbekkink-Marchand, Van Driel & Verloop, 2006; Windschitl, 2002). Teachers struggle to integrate their beliefs into their teaching behaviour (Bolhuis, 2000; Postareff et al., 2007). Changing teaching behaviour implies a shift in the professional identity for many teachers. Beijaard, Meijer and Verloop (2004) define teacher professional identity as a continuous dynamic process of making sense of teaching experiences. A teacher's professional identity consists of multiple sub-identities and plays a pivotal role in the change to a more learner-oriented approach to teaching (Aangenendt, Kuijpers & Sanders, 2012; Lengelle & Meijers, 2015). However, teachers find it difficult to change their professional identity (Beijaard et al., 2004).

#### 2.2.4 *Purpose of this study*

Previous studies have mainly used indirect methods to ascertain teachers' beliefs about teaching and learning (Boelens, De Wever, Rosseel, Verstraete, & Derese, 2015; Postareff et al., 2007). These studies focused predominantly on tutors' self-perception (Bolhuis & Voeten, 2007; Hoekstra et al. 2009; Meirink et al., 2009; Oolbekkink-Marchand et al., 2006) and on student perceptions of tutors (Boelens et al., 2015; Zwaal & Otting, 2010). These studies did not employ direct methods to explore the actual teaching behaviour (Boelens et al., 2015), which is one of the greatest challenges to analyse. The present case study focuses on verbal tutor interventions in a PBL session. Using a newly developed observational method, the purpose of this study is to investigate to what extent tutor interventions are in line with a learner-oriented approach to teaching.

### 2.3 Method

To indicate whether tutor interventions were teacher-oriented or learner-oriented, tutors of an International Hospitality Management programme at a University of Applied Sciences in the Netherlands were asked to participate. This university had implemented a hybrid PBL curriculum since 1989. In a hybrid PBL curriculum, besides PBL, other more teacher-oriented educational methods (lectures, workshops) are used to support the students' learning process, problem solving is led by the students and students receive minimal guidance by tutors on content knowledge (Hung, 2011).

#### 2.3.1 *Context*

The PBL approach is integrated in four thematic-interdisciplinary ten-week modules per year. PBL groups consist of ten to twelve students and a tutor. They meet twice a week. A seven-step approach is used to structure the PBL process (Moust, Bouhuijs, & Schmidt, 2007). In step 1, students start up a task and clarify and summarise the problem. In steps 2, 3 and 4, students define, analyse and restructure the problem. Based on these four steps students formulate learning objectives in step 5. In step 6, students search and study information. In step 7, they report their findings, construct and evaluate new knowledge (Moust et al., 2007). Students have various roles in PBL sessions. Each session one student fulfils the chairperson role, one student the secretary role and one student the observer role. Each session students have another role. The chairperson sets the agenda and prepares the structure of the PBL session. In line with the self-directed learning principle the chairperson starts and guides the PBL process.

The tutor facilitates the students’ learning process. The tutor role consists of activating the students’ knowledge construction, supporting students’ learning process and enhancing the collaborative learning process (Zwaal & Otting, 2010). Not all tutors are content experts. Therefore, tutor manuals are used in which a problem statement, learning goals and background information of each problem scenario are described.

The second-year ‘Hospitality Performance’ module was selected for this study. There were two reasons to choose this module: (1) prior to this study the coordinators and tutors had already decided to take videos of their PBL sessions, and (2) second-year students have sufficient experience with PBL and are able to work with unstructured problems (Otting & Zwaal, 2011). In this module, students have to take a knowledge test at the end of the module. This test contains closed and open questions.

2.3.2 Participants

Seven out of twelve tutors (three male and four female) accepted the invitation to participate in this study. Illness and rescheduling of PBL sessions were reasons why the other five tutors were not able to participate. The age of the seven participating tutors ranged from 21 to 60 years. The years of experience with problem-based learning varied between 1 and 14 years, three tutors taught hospitality-specific disciplines, while four tutors had a background in other disciplines. Table 2.1 shows an overview of the tutors’ gender, age, tutor experience and discipline.

Table 2.1. Characteristics Participants

Tutor	Gender	Age	Tutor Experience	Hospitality Discipline
A	F	51 - 60	7	yes
B	M	21 - 30	3	no
C	M	41 - 50	3	no
D	M	41 - 50	14	no
E	F	31 - 40	12	no
F	F	41 - 50	1	yes
G	F	41 - 50	5	yes

In each PBL session students used the same PBL scenario. For each tutor one session was recorded on both audio and video, and transcripts were made. Management granted permission for this study and both tutors and students cooperated voluntarily and gave their written consent. All participants were informed about the objectives of the study and the confidential treatment of the research data and results.

2.3.3 Data analysis

Four categories were developed to identify to what extent tutors used teacher-oriented or learner-oriented interventions during the PBL session. The learner-oriented principles (self-directed, constructive, contextual and collaborative learning) and the teacher-oriented principles (externally-directed, reproductive and individual learning) were included. Based on the study of Vermunt and Verloop (1999) the interventions were divided in cognitive interventions (knowledge construction) and affective interventions (learning process). To determine the way tutors facilitate knowledge construction and learning, the tutor style was divided in a learner-oriented supportive tutor style and a teacher-oriented directive tutor style.

44 Four pilot observations were conducted to enable the finalisation of the categories. After these observations the categories were discussed in a focus group of four teachers of the Hospitality Management programme and the observation categories were presented to all PBL tutors. The feedback from the tutors made clear that the four categories made sense to all involved tutors. Table 2.2 presents an overview of the four observations categories. The next subsection gives a brief overview per category: tutor style, goal of the intervention and tutor activities will be explained.

Table 2.2. Overview of Tutor Categories

	Teacher-oriented directive tutor style	Learner-oriented supportive tutor style
Knowledge construction	Content Instructor Cognitive Externally-directed learning Reproductive learning	Content Activator Cognitive Self-directed learning Contextual/Constructive learning
Learning process	Process Organiser Affective Externally-directed learning Individual learning	Process Observer Affective Self-directed learning Collaborative learning

## Tutor categories

### Teacher-oriented categories:

- *Content instructor* interventions direct the content. The tutor takes the role of information provider or dispenser of information. Tutors who use these interventions behave as an expert in the content domain. The goal of these interventions is that students acquire information and remember the content. The primary focus of content instructor interventions is on transmitting knowledge, teaching by giving examples and explications, explaining relations, clarifying, informing, instructing, adding, controlling, indicating, answering and presenting overviews, arguments and conclusions.
- *Process organiser* interventions direct the process. Tutors who use these interventions take the role of process leader. The goal of these interventions is to direct the process in an efficient and effective way. The tutor behaves like a chairperson and structures the PBL process by helping students to keep focus, to plan their learning process, by addressing behaviour of students and by pushing, inciting and giving suggestions for improvement. Feedback is mainly given on individual performance.

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### Learner-oriented categories:

- *Content activator* interventions support the content. Tutors who use these interventions behave like a facilitator and activator of students' critical thinking process. The goal of these interventions is that students engage in sense making and develop concepts. Content activator interventions demonstrate, model and explicate different learning and thinking strategies, encourage, motivate and challenge students to apply these different strategies, activate prior knowledge, stimulate dialogue and stimulate students to apply theories to practical applications.
- *Process observer* interventions support the development of the collaborative learning process. Tutors who use these interventions take the role of observer and evaluator with the goal that students reflect on their group performance. Process observer interventions are focused on observing and monitoring students' learning and thinking processes. Moreover, these interventions stimulate students to evaluate what and how they are learning. Process observer interventions encourage students to feel comfortable in voicing their views. Feedback is mainly given on group performance.

## PBL phases

Each PBL session was divided in three phases: the starting phase, the main phase and the evaluation phase. Time spent on these phases was noted.

- *Starting phase.* It is common practice in PBL sessions that the chairperson takes the initiative to start the session. The chairperson assigns the student role of secretary, board writer and observer. During the starting phase attention can be paid to announcements and minutes of the previous session. Announcements from the tutor are an item on the agenda. The seating position of the tutor (at the head of the table or amidst the students), who started the session (tutor or student) and who divided student roles (chairperson or tutor, were the roles set before or during the session) was observed.
- *Main phase.* In the main phase students use the seven-step procedure to solve the problem. Students are expected to act as self-directed learners in using the seven-step procedure. Focal sampling was applied by concentrating on the observation of the verbal interactions of the PBL tutors (Bolhuis, 2000). The unit of analysis was verbal interventions. A verbal intervention was defined as each verbal expression of the tutor in an episode during the PBL process (Lee et al., 2013) and could include one or more sentences. Short expressions meant as a follow up of an earlier intervention were not identified as a new intervention. Other short expressions (for example ‘well done’) were identified as interventions. The four categories were used to code tutors’ verbal interventions. To identify the interventions two steps were taken. The first step was to decide on the nature of the intervention: knowledge construction or learning process. The second step was to identify the style of intervention: directive or supportive. To code the tutor interventions the categories as shown in Table 2.2 were used. Every tutor intervention had an unequivocal relation to one of the four intervention categories. The transcripts of the audios formed the basis for the coding of the tutor interventions. Two researchers coded the tutor interventions independently from one another. Cohen’s Kappa was used as a measure of agreement between the two researchers ( $\kappa = .63$ ) and indicated a substantial agreement (Landis & Koch, 1977). After the Cohens’ Kappa was determined, two researchers discussed the non-agreement interventions with the goal to reach consensus.



- *Evaluation phase.* During the evaluation phase, the observer, peers and tutor are expected to share their feedback, based on their observations. In line with the collaborative learning principle the constructive feedback is mainly given on group performance. In the evaluation phase observations were made of the feedback in general. Specifically, it was analysed who gave the feedback (tutor and/or observer) and to what extent the feedback was given on individual performance and/or group performance.

## 2.4 Findings

The findings of this study are presented in three sections: starting phase, main phase and evaluation phase.

### 2.4.1 *Starting phase*

The starting phase took 2 to 7 minutes. Four tutors (A, B, C, and F) had chosen to sit at the head of the table. Two out of these four tutors (A and B) also took the initiative to start the session and gave, after their announcements, the chairperson permission to take over. In the PBL sessions of tutors C, D, E, F, and G students took initiative to start the session. There was no starting phase in the PBL session of tutor G. The chairperson in this PBL session immediately started the main phase.

In the group of tutor A, students' roles were not set before the PBL session. Tutor A assigned these student roles and organised the structure of the PBL session. Tutor B checked the student roles and explained a new way of giving feedback. In the other five PBL sessions the chairperson checked the student roles. In the session of tutor D and E no student observer was assigned. Two tutors started with announcements (A and B), tutor E made announcements after she got permission from the chairperson. Tutor F answered questions of students during the starting phase. It was striking that tutor G decided on in the seating position of students.

### 2.4.2 *Main phase*

The main phase of the PBL sessions of tutors A to F took 65 to 80 minutes. Tutor G spent less time on the main phase (65 minutes), and she spent more time (20 minutes) on the evaluation phase.

**Table 2.3. Interventions per Tutor and per Tutor Category**

<b>Tutor</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
<b>Number of interventions</b>	<b>130</b>	<b>100</b>	<b>55</b>	<b>28</b>	<b>28</b>	<b>20</b>	<b>17</b>
Content Instructor	44	27	26	3	11	8	2
Process Organiser	71	59	8	15	9	5	11
Content Activator	13	8	19	4	7	7	4
Process Observer	2	6	2	6	1		

As can be seen from Table 2.3 the number of verbal tutor interventions in the main phase of the PBL-session varied from 17 to 130 interventions. Two tutors (A and B) intervened over 100 times, while the other tutors made between 17 to 55 interventions. All tutors showed more teacher-oriented (content instructor and process organiser) than learner-oriented (content activator and process observer) interventions.

What follows are descriptions and illustrations of teacher-oriented and learner-oriented interventions.

**Teacher-oriented interventions**

The majority of the tutor interventions were teacher-oriented. Two-third of the teacher-oriented interventions were process organiser interventions and one-third were content-instructor interventions. Tutors A, B, D, and G preferred teacher-oriented process organiser interventions and Tutors C, E and F preferred the teacher-oriented content instructor interventions.

Tutors (A and B) showed the highest number of verbal interventions and applied more teacher-oriented interventions than the other tutors. These two tutors preferred process organiser interventions and repeatedly took over the role of the chairperson. For instance, tutor A assigned students to groups for the presentations of their findings in the next PBL session. Tutor B took over the role of the chairperson by explaining and directing the PBL procedure. Tutor E showed an example of another process organiser intervention. This example took place during step 4 of the PBL process:

*Tutor: “I am going to interrupt you for a second. What is happening now? You combined step 3 and 4: brainstorming and structuring at the same moment. Actually brainstorming is just shout and put the words on the whiteboard and in step four you discuss the word, you delete words, you structure words and based on that you make your learning*

*goals. But actually, you did some kind of combination, since you discussed every word and you already put them in different groups. So would it be necessary to go through those words in every single group or would it already be possible to make learning goals based on what you already did?"*

Student: *"Yes learning goals".*

Tutor: *"Let's give it a try".*

The tutor summarised the way students used step 4 of the PBL process. Although this intervention looks like a process observer intervention by giving feedback on the way the students dealt with the problem, this intervention is coded as a process organiser intervention. Instead of asking the PBL group to diagnose the way they executed the seven-step procedure and enabling students to reflect on the procedure, the tutor explained how the students used the seven-step procedure.

The following episode is an example of a process organiser intervention (tutor G) in step 3 of the PBL process:

Chairperson: *"We can put the words (on the white board) in different groups".*

Tutor: *"You have five different groups with the same problem, you get five different problem statements and of course you will miss out on certain things. But Malou (student) is now getting restless. So make a decision and make sure it is not too limited".*

The tutor tried to speed up the process because she noticed that a student was getting bored and restless. Tutor G took over the role of the chairperson.

All seven tutors used content instructor interventions. Tutor C, E and F applied more content instructor interventions than process organiser interventions. In the following example tutor A emphasised the importance of the various departments in a hotel. This episode took place in step 2 of the PBL process and was coded as a content instructor intervention.

Tutor: *"We need to find out what the market is. What kind of hotel is this? How many Stars do they have? Which chain do they belong to? So we have the GM (General Manager) and Sales and Marketing manager?"*

Student: *"Also HR (Human Resource)".*

Tutor: *"HR, do we need other departments to look at?"*

Student: *"If we know what kind of company we want than you....."*

Tutor: *"You are missing a very important thing".*

Students: ..... *(no answer)*

Tutor: *"Revenue is a part of which department?"*

Student: *"Sales".*

Tutor: *"Sales and Marketing. Which department do we need..... when I talk about money?"*

Student: *"Finance".*

Tutor: *"Finance and the F&B (Food and Beverage) department are operational departments. So, we are looking into marketing and sales, finance and operations and HR. And, what about the GM? And then maybe we get an answer on all our questions. But what do you want to know, actions or topics? Which departments are more important?"*

Student: *"Rooms Division".*

Tutor: *"Rooms Division".*

Student: *"Excuse me tutor, but is this not what we have to find out by ourselves, actually?"*

The last student comment showed that students could not gain control over the PBL process. The tutor did not acknowledge that second-year students already have knowledge about the various departments in a hotel. It is basic knowledge for second-year students, so there should be no need for the tutor to demonstrate content expertise. In this case the tutor transmitted, presented information and summarised the input of students.

Most tutors used the background information in the tutor manual to direct students. An example of a content instructor intervention (tutor C) in step 3 of the PBL process was:

Tutor: *"So you were trying to develop a sort of certain quality. You're looking at different cultures to understand these cultures. Is there a term maybe that you have heard somewhere in classes at some point in the past?"*

Students do not come up with these terms; however they discuss what to adjust.

Tutor: *"If we put all these words together, there is some fancy term that describes it? What we need to become? We are looking for two words"*

Student: *"Emotion?"*

Tutor: *"That's another part of it as well, emotion, culture.... What's in your head? What do we have up there?"*

Student: *"Brains?"*

Tutor: *"We need to be culturally and emotionally intelligent".*

In the tutor manual 'emotional and cultural intelligence' were mentioned as basic concepts. The tutor tried to direct students to these concepts but was not successful and decided to transmit these two concepts.

### **Learner-oriented interventions**

Nearly one fourth of all tutor interventions was learner-oriented. Content activator interventions were more observed than process observer interventions. Especially interventions to stimulate contextual learning were shown. The following episode is an example of a content activator intervention of tutor C:

Tutor: *"Playing the devils' advocate: What if company employees are neither culturally nor emotionally intelligent?"*

Student: *"They have to hire their own and local managers?"*

Tutor: *"So you're still going to hire culturally unintelligent foreigners to work in your new hotel in Dubai?"*

Tutor: *"I think all of you have completed an internship in a foreign country. You have a lot of prior knowledge; what was your experience with the HR department of the company? How did it work, did the company arrange everything when you went abroad?"*

To stimulate contextual and constructive learning the tutor presented some cases. Starting with the sentence: "Playing the devils' advocate.....". Moreover, the tutor challenged students to share their experiences abroad and activated prior knowledge by asking open questions.

A recurrent issue was that a learner-oriented intervention was immediately followed by a teacher-oriented intervention. The following episode is an example of a content activator intervention of tutor B. This intervention was followed by a content instructor intervention and a process organiser intervention. This episode took place in step 3 of the PBL process.

Tutor: *"We see culture as the first term on the white board. Can we maybe add cultural differences? Or are you more interested in the tasks of a pre-opening team?"*

Student: *"The pre-opening team starts a new company while they do not have any experiences in Asia".*

Student: *"So what is the relation between cultural differences and the tasks?"*

Student: *"For them it is different; I mean they have some experience in Asia".*

Tutor: *"Are you already thinking of a learning goal?"*

Student: *"I think it is better for a learning goal than for the brainstorm".*

Tutor: *"Brainstorm is the input for the learning goal".*

Student: *"I can imagine that, but it is more a question than a keyword".*

Tutor: *"Just keep it in mind. Write down pre-opening team for now. Normally I do not do this but I have two important items to add. I know these are important for the test. Two terms which you are probably not familiar with: critical success factors and key performance indicators".*

The tutor started with a question to stimulate students to link two different keywords: cultural differences and pre-opening team (content activator intervention). As a consequence students asked themselves what the relation is between these both concepts. Next the tutor interrupted the discussion by organising the PBL process (process organiser) and by informing students about two concepts they probably never heard of before (content instructor). He mentioned these concepts because they are part of the test.

Not all tutors used process observer interventions. Nearly five per cent of the interventions were process observer interventions. Although tutor D preferred process organiser interventions, this tutor showed also process observer interventions. An example of one of the process observer interventions is demonstrated in the following episode. This intervention took place in step 2 of the PBL process.

Chairperson: *"Please (to other student) could you write the main question on the white board?"*

(Student writes the problem statement on the white board)

Chairperson: *"This is not the main question, I asked the main question".*

Student: *"Okay, I do not understand it".*

Also other students do not know what to do. They are confused.

Tutor: *"So up to this point, it is not clear to everyone, so what is happening now? Chair how can you make sure that all students understand what you mean with a main question?"*

Chairperson: *"I mean the main question we formulated last week. This is the problem statement. Please let's take the minutes of last week".*

Later on:

Tutor: *"How do all these learning goals attribute to the main question? Did the learning goals answer you main questions?"*

Tutor D supported and monitored the learning process and took time to discuss the learning process. He asked students to discuss ambiguities with peers and challenged the chairperson and the PBL group to use different thinking strategies to formulate the problem statement. At the end of the session the tutor stimulated students to relate the learning goals with the main question.

### 2.4.3 *Evaluation phase*

The evaluation phase took 5 to 20 minutes. In the PBL sessions of tutor A, B and G this phase took more than 15 minutes. All tutors took the initiative to start the evaluation phase. In two PBL sessions (tutor D and E) no observer was appointed. In five PBL sessions the tutor provided feedback after the observer reported the feedback. Most observers and tutors gave feedback on individual performance of students. Two tutors (C and E) also provided feedback on group performance. Tutor D only gave feedback on the group performance. Tutor E and D discussed the way students applied the seven-step procedure.

Tutor B asked the observer to keep the observation short and simple and to give a tip and top to each individual. Tutor E gave students homework to explore different feedback techniques. Before students gave feedback they discussed the different techniques. Tutor C, E, and G gave detailed and extensive feedback on the individual performance of each student. The feedback given by the tutor G was formulated as judgements. The following examples were used “You are a deep thinker”, “You are a real organiser” and “You are analytical”. In most cases the tutor illustrated this judgement with an example. Tutor E used a lot of examples to explain her feedback and related individual performance to group performance.

The observer of the PBL session of tutor A was not able to give proper feedback because the session confused him, where upon the tutor asked the group to give their opinion. One student seized the opportunity to give feedback to the tutor. He expressed that the tutor took over the role of chairperson and did not give students the opportunity to organise the PBL session. The tutor explained that these interventions were needed to speed up the process.

## 2.5 Conclusions and Discussion

The main goal of this study was to investigate to what extent tutor interventions are in line with the learner-oriented approach to teaching. PBL is a



learner-oriented approach to teaching and tutors are expected to apply learner-oriented interventions to support knowledge construction and facilitate the students' learning process. The observations of PBL sessions showed that tutors were predominantly focused on controlling subject matter and organising the learning process. In other words, tutors showed a directive tutor style and, therefore, most tutor interventions were not in line with a learner-oriented approach to teaching. Tutors were less focused on the learners and less focused on supporting the conceptual-analytical skills of students (Trigwell, 2011). In line with studies of Moust et al. (2005), Windschitl (2002) and Williams (2011), the present case study showed that even experienced tutors struggle with learner-oriented interventions. Consequently, not all tutors support the four PBL learning principles: self-directed, constructive, contextual and collaborative learning. Tutors do not always seize the opportunity to experiment with learner-oriented interventions and have the tendency to fall back on teacher-oriented interventions, which affects the quality of PBL.

### *2.5.1 Tutor interventions*

Tutors facilitated the three PBL phases differently. Tutors showed a large range in the number of interventions. In the main phase of the PBL session the number of interventions ranged from 17 to 130. It seems tutors were divided into two groups. The first group consists of tutor A and B who showed 130 and 100 interventions; the second group consists of the other tutors who showed 17 to 55 interventions. Tutors who showed a lot of interventions used (relatively) more teacher-oriented interventions than tutor who intervened less. Tutors from both groups, however, applied more teacher-oriented interventions than learner-oriented interventions, indicating that they all used a more directive tutor style in guiding the learning process and the process of knowledge construction. Contrary to the ideology of self-directed learning, as expressed by the university's policy, tutors directed the content, transmitted knowledge, controlled the subject matter and structured the PBL learning process. Moreover, tutors gave their own opinion, gave advices and summarised the students' findings. The main reason for this behaviour seems to be that the information in the tutor manual, which is meant to be advisory, is seen as compulsory and prescriptive. A second reason why tutors are focused on content is the knowledge test at the end of the module.

Nearly one-fourth of all tutor interventions were learner-oriented interventions. Content activator interventions were observed more than process observer interventions. Especially interventions to stimulate contextual learning were shown.

Apparently, interventions to activate students' prior knowledge and to challenge students to link practice to theory are less difficult to support than interventions related to students' conceptual knowledge construction. To stimulate the construction of knowledge by students tutors could have asked questions to broaden the content: "What other factors are important?" or asked questions to deepen the content: "Why do you think this is important for the success of the company?" (Barrett & Moore, 2011). Surprisingly, tutors hardly showed any process observer interventions. This implies that tutors rarely diagnose and observe the collaborative learning process and therefore scarcely give any constructive feedback on group performance. None of the tutors asked students to reflect on their group and learning process. Tutors could employ process observer interventions by asking the students to evaluate the process: "What is happening at this moment" and "What could you do to stimulate and activate the process?" (Barrett & Moore, 2011).

Differences among tutors were observed during the starting and evaluation phases. First of all it seemed that the seat arrangements were related to tutor interventions. It was remarkable that the three tutors who had chosen to sit at the head of the table showed the highest number of interventions. Contrary to the self-directed learning principle two tutors took the initiative to start the session. These two tutors showed the highest number of interventions and these tutors started the evaluation phase as well. These findings suggest that there may be a link between the number of interventions, the position of the tutor and the tutor style. This study demonstrated that it is likely that a tutor who starts as a directive tutor, who has chosen to sit at the head of the table, and/or takes the chairperson role in the starting phase, continues this style in the main phase and prefers teacher-oriented interventions.

Most tutors took over the role of the student observer and organised the evaluation phase. Feedback is an essential factor of a PBL session and finds its expression in the specific role of the student observer. How to give feedback is an important learning issue for all students. A tutor who takes over the observer role does not enable students to give feedback in a proper way. Feedback on individual and collaborative learning contributes to improving the quality of PBL. All tutors gave feedback on individual performance, however not all tutors gave feedback on group performance as well. This indicates that most tutors did not emphasise collaborative learning but focus on individual learning.

It is likely that tutors who apply a lot of teacher-oriented interventions do not give students enough time to formulate and to answer their own questions. Therefore students do not get enough space to explain and to develop their own ideas and concepts (Aarnio et al., 2014). A high number of interventions may confuse and frustrate students. Interventions should be just in time and just enough to support student learning (Neville, 1999). Students need critical and deep-approach questions to activate and develop their thinking and learning strategies (Aarnio et al., 2014; Chng et al., 2013; Maudsley, 2002; Trigwell, 2011). On the other hand, a tutor who employs a few or short interventions might not stimulate students to adopt a deep approach to learning and may also frustrate students. Moreover, the wide range of different tutor behaviours leaves students with a fragmented view of what problem-based learning is. How do students experience problem-based learning with a tutor who makes 130 interventions in a module? And what are their feelings if the tutor in the next module intervenes only 17 times? In general, it seems that students could benefit from more opportunities to direct their own learning process and as a consequence they might be less focused on the tutor and more on the group.

Tutors who predominantly act as content instructors and process organisers do not give students enough space and do not encourage students to develop as self-directed learners. It seems that students do not have the opportunity to make mistakes, to experiment and are constantly directed in a certain problem solution. As a consequence, students are not facilitated to develop various learning- and thinking strategies and are less able to develop the professional skills needed to cope with the rapidly changing environment in their future career in the hospitality industry (Schmidt et al., 2009).

### *2.5.2 Change of teacher role*

This study does not clarify why tutors apply predominantly teacher-oriented interventions. A possible explanation might be that tutors did not change or are not able to adjust their professional identity. According to Akkerman and Meijer (2011), changing a teacher professional identity is an on-going process of negotiation with teaching experiences. A hybrid PBL curriculum is a combination of problem-based learning, training and/or other teacher-oriented methods. The mix of teacher- and learner-oriented methods varies between the different modules, which make it difficult for both teachers and students to deal with the demands of various teaching-learning contexts. Therefore, it might be difficult for tutors to fulfil these different teacher roles and to integrate these roles in their professional identity. This might lead to a teacher professional identity conflict.

An on-going dialogue about teaching experiences and the teacher role can stimulate and encourage tutors to make sense of their teacher professional identity (Beijaard et al. 2004). A non-dialogical situation – as is often found in schools (Lodders, 2013) - leads to falling back on ‘default stories’ that express traditional ways of teaching teachers are used to (Meijers & Lengelle, 2012). Questions such as “What makes it impossible for me to use learner-oriented interventions” and “Which interventions are needed to encourage students to act as self-directed learners” should be to be a part of this dialogue. This supports the tutor to construct a new professional identity (Meijers & Lengelle, 2012).

### *2.5.3 Limitations and practical implications*

A number of limitations need to be considered. Firstly, only seven tutors of one university programme, available in the current module and period, participated in this study. The ability to determine and control the selection of the sample was limited. Therefore, a certain self-selection bias might be present, hence, the findings need to be interpreted with caution and cannot be generalised without further ado. Secondly, it is important to bear in mind that tutors’ non-verbal interventions were not taken in consideration. Non-verbal behaviour might influence student behaviour as well (Feldman, 1990). Thirdly, tutors were not asked to explain their interventions (Lee et al., 2013). Further research needs to be done to explore why tutors tend to use teacher-oriented interventions instead of learner-oriented interventions.

The findings of this study suggest a number of practical implications. The first implication is that other modules within the hospitality programme or within other universities can benefit from the observation instrument as well. The second implication is that the developed instrument is not only useful as an observation instrument. Since this instrument made sense to tutors, the instrument can also be used for giving (individual) feedback to PBL tutors. Moreover, the instrument could be helpful as a peer feedback instrument. Observations of peers may help tutors become conscious of their own teaching behaviour. The third implication is that tutors get an insight into a repertoire of facilitation strategies they can use in PBL (Hmelo-Silver & Barrows, 2006). The observation findings might be a starting point for a process of collective learning (Lodders, 2013) about principles of problem-based learning and its implications for a teaching approach.

Key policies of the educational leaders should support this dialogue and should be a stimulator to start a dialogue about the long-term vision of a PBL curriculum. Much effort has to be put into working towards a shared vision on supporting problem-based learning. A first step might be to support tutors to become aware of the discrepancies between the different teaching approaches, common ideas about problem-based learning and its learning principles. Moreover, a dialogue might encourage tutors to integrate learning principles into the PBL session, because it helps them to a shift in their professional identity. (Lengelle & Meijers, 2015).



### 3. Explaining discrepancies between teacher beliefs and teacher interventions in a problem-based learning environment: A mixed-methods study

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## Abstract

The purpose of this study was to explore the discrepancy between teacher beliefs and behaviour in a Problem-Based Learning (PBL) environment. Using a survey and observations, this study demonstrated that tutors prefer learner-oriented beliefs, but in their teacher behaviour they showed a more traditional approach to teaching. Analysis of semi-structured interviews indicated that this inconsistency could be attributed to the way in which problem-based learning is embedded in the curriculum, the confidence teachers have in the self-directing capabilities of students, and the self-confidence of teachers regarding their own facilitation skills.



### 3.1 Introduction

An increasing number of universities have developed curricula with a learner-oriented approach to teaching (Bolhuis & Voeten, 2001; Moust, Van Berkel, & Schmidt, 2005). Problem-based learning (PBL) is an example of a learner-oriented approach to teaching (Chng, Yew, & Schmidt, 2011; Hmelo-Silver & Barrows, 2006; Savery, 2006) that emphasises self-directed, constructive, contextual and collaborative learning (Dolmans, De Grave, Wolfhagen, & Van der Vleuten, 2005; Hung, 2011). PBL has its origins in medical education and is introduced in many different countries, for instance Canada, United States, Australia, The Netherlands and Singapore. Moreover, PBL is also adopted in other disciplines than medical education only, for instance economics and business, psychology, biology and law (Schmidt, Van der Molen, Te Winkel, & Wijnen, 2009).

The teacher in PBL, known as a ‘tutor’, plays a crucial role as a facilitator, activator, and monitor (Hattie, 2009; Hmelo-Silver & Barrows, 2006). The tutor role differs from the teacher role in a teacher-oriented environment. In a teacher-oriented environment, the teacher has a directive role and aims to achieve knowledge transmission by giving examples, explaining the relationships and making distinctions between main and secondary issues. Moreover, a directive teacher structures the learning process and helps students to stay focused. In a learner-oriented environment a tutor instead takes a supportive role (Dahlgren, Castensson, & Dahlgren, 1998; Meirink, Meijer, Verloop, & Bergen, 2009). The tutor facilitates the students’ learning process, encourages students to take responsibility for their own learning (Hmelo-Silver & Barrows, 2006), activates knowledge building, observes the students’ thinking and learning strategies, and stimulates students to evaluate their learning process (Chng et al., 2011; Lee, Lin & Lin, 2013).

A learner-oriented approach to teaching may improve the quality of PBL (Zwaal & Otting, 2010; Moust et al., 2005) and leads to a higher quality of student learning (Trigwell & Prosser, 2004). Learner-oriented interventions are vital to the learning process and more effective in facilitating students’ learning outcomes (Barrett & Moore, 2011). To enable learner-oriented interventions, cognitive apprenticeship strategies should play a role both in the curriculum development and in the tutors’ guidance strategies (Collins, Brown & Newman, 1989). Tutors should be able to apply different cognitive apprenticeship strategies such as modelling, coaching, scaffolding, articulation, reflection and exploration to

support the students' learning process (Goh, 2014; Hmelo-Silver & Barrows, 2006). Tutors often find it difficult to guide students in a learner-oriented environment (Dolmans, Gijsselaers, Moust, De Grave, Wolfhagen, & Van der Vleuten, 2002; Donche, 2005; Oolbekkink-Marchand, Van Driel, & Verloop, 2006) and experience the use of different strategies as a very complex task (Goh, 2014; Hendry, 2009; Hmelo-Silver & Barrows, 2006). Even experienced tutors seem to struggle with their tutor role (Hung, 2011; Windschitl, 2002).

According to Ertmer (1999, 2005) two sets of barriers influence tutor behaviour: extrinsic barriers and intrinsic barriers. Extrinsic barriers refer to limitations in the teachers' environment (e.g., inadequate equipment, no training possibilities). More important however, are intrinsic barriers, which refer to the ways tutors think about teaching and learning (Kim, Kim, Lee, Spector, & DeMeester, 2013).

### 3.1.1 *Tutor beliefs*

One way to investigate intrinsic barriers is to focus on tutor beliefs. In the present study tutor beliefs are defined as 'suppositions and commitments of tutors based on their own evaluations and judgments' (Meirink et al., 2009, p. 90). Tutor beliefs and conceptions are frequently used to describe the way teachers think about teaching and learning and are often used in the same context (Hoekstra, Brekelmans, Beijaard, & Korthagen, 2009; Jacobs, Muijtjens, Van Lwijk, Van der Vleuten, Croiset, & Scheele, 2014; Meirink et al., 2009). Beliefs are more deeply rooted and have more impact on tutor behaviour than conceptions (Jacobs et al., 2014a; Pajares, 1992). Tutor beliefs influence the type of interventions tutors choose in their teaching practice (Oolbekkink-Marchand et al., 2006; Pajares, 1992).

A distinction is made between teacher-oriented beliefs and learner-oriented beliefs (Hoekstra et al. 2009; Lindblom-Ylänne, Trigwell, Nevgi, & Ashwin, 2006; Meirink et al., 2009; Trigwell & Prosser, 2004). Teachers with teacher-oriented beliefs prefer externally-directed, reproductive and individual learning. Teachers with learner-oriented beliefs prefer self-directed, constructive and collaborative learning. According to Vermunt and Verloop (1999) not all teaching activities lead to the same learning outcomes. Therefore, Meirink et al. (2009) divide learning activities into cognitive and affective learning activities. Cognitive learning activities are focused on knowledge-based learning outcomes and affective learning activities on emotions that influence students' learning progress (Vermunt & Verloop, 1999).

### 3.1.2 *Tutor behaviour*

Tutor beliefs do not always predict actual tutor behaviour. Hung (2011), and Windschitl (2002) demonstrated that most teachers have a preference for learner-oriented beliefs, but not always apply learner-oriented interventions in the classroom. Teachers with explicit learner-oriented beliefs still tend to fall back on teacher-oriented behaviour (Donche, 2005; Meirink et al., 2009). These studies demonstrated a difference between the ‘espoused theory’; the ideas that teachers believe guide their behaviour and their ‘theory in use’; the ideas that actually guide teachers’ behaviour (Argyris & Schön, 1996).

The literature gives various explanations for the discrepancy between tutor beliefs and behaviour in a PBL context. Previous studies have reported that tutor interventions depend on the tutors’ content expertise (Dolmans et al., 2002; Schmidt, Van der Arend, Moust, Kokx, & Boon, 1993). Content-expert tutors seem to find it difficult to limit themselves to the supportive role of facilitator (Kaufman & Holmes, 1998) and are likely to play a more directive role (Silver & Wilkerson, 1991). A non-expert tutor is focused on the facilitation and evaluation of the learning process (Dolmans et al., 2002) and enables students to use self-directing skills (Hung, 2011).

Tutor interventions depend as well on the way PBL is integrated into the curriculum (Hung, 2011; Lindblom-Ylänne et al., 2006). Savin-Baden (2000) suggests that many curricula use problem-solving learning instead of problem-based learning. Problem-solving learning is a more teacher-oriented approach, in which problem scenarios are developed based on subjects and disciplinary areas. Teachers determine what knowledge and skills are needed in order to achieve a ‘good’ solution for the problem. The solution for the problem is determined by the content. PBL is a learner-oriented approach where real-life problems are at the core of learning and students, with the support of a tutor, determine what knowledge and skills they might need to solve the problem. School subjects or disciplines do not determine the solution of the problem; there is no predetermined ‘right’ solution for the problem. Students are allowed and encouraged to take the responsibility to solve the problem in a variety of completely different ways (Hung, 2011).

Lastly, the capability of students plays a role. For instance, students may have difficulties with self-directed and constructive learning (Yew & Schmidt, 2009) and first year students may even have more difficulties with self-directed

learning. Tutors need to adjust their guidance strategies to inexperienced students and need to support them to develop self-directed learning (Schmidt et al., 1993).

### 3.1.3 *Present study*

Previous studies showed contradictory findings about the impact of teacher beliefs on teaching behaviour. For instance, various studies emphasised that teacher beliefs play a key role in teaching behaviour (Hoekstra et al., 2009; Kim et al., 2013; Mälkki & Lindblom-Ylänne, 2011) although other studies demonstrated that teacher beliefs do not always predict teaching behaviour (Bolhuis & Voeten, 2007; Donche, 2005; Postareff, Lindblom-Ylänne, & Nevgi, 2007; Windschitl, 2002). The present study is conducted in a PBL environment in which it is required that tutors not only have a learner-oriented way of thinking about teaching and learning but also demonstrate learner-oriented behaviour. However, prior studies have not dealt with how tutors think about learner-oriented principles and how tutors apply learner-oriented interventions in PBL (Dolmans et al., 2002). Therefore, the first aim of this study was to identify and compare tutor beliefs and tutor behaviour regarding learner-oriented and teacher-oriented principles. A growing body of literature recognises that besides intrinsic factors, extrinsic factors also have impact on tutor behaviour (Ertmer, 1999; Hung, 2011; Moust et al., 2005; Windschitl, 2002). So far, little attention has been paid to how tutors evaluate these extrinsic factors. Therefore, the second aim of this study was to explore, from the perspective of tutors, the influence of extrinsic factors on their actual behaviour in a PBL curriculum. And lastly, the third aim was to investigate whether tutors evaluate their beliefs, and the influence of the factors on their every day practice with other tutors of their team.

## 3.2 Method

### 3.2.1 *Context*

Teachers of a Hospitality Management program at a Dutch University of Applied Sciences participated in this study. The university had adopted a hybrid PBL curriculum approach (Savin-Baden, 2000) more than 25 years ago. This suggests that conventional teaching methods (e.g., lectures, workshops) support the PBL curriculum (Otting & Zwaal, 2011). The four learning principles ‘self-directed, constructive, contextual and collaborative learning’ are at the foundation of this hybrid PBL approach.

In PBL, students discuss and analyse problem scenarios during periods of 10 weeks. Problem scenarios are derived from the real world and are interdisciplinary. Students meet twice a week and have different roles, each session one of the students is chairperson (structures the PBL meeting) and one of the students is an observer (gives feedback to students and group). The so-called 'seven-step strategy' (Moust, Bouhuijs, & Schmidt, 2007) is used as a tool to structure the PBL process. In step 1 to 5, students clarify ambiguous terms and concepts, define and analyse the problem in a systematic way and then formulate learning goals. In step 6, students search for additional information outside the group and in step 7, students report on the information they have found and construct new knowledge collaboratively. Tutors use tutor manuals in which learning outcomes, preferred analyse methods and content information per problem scenario are described.

### **3.2.2 Research design**

A descriptive research design was applied to explain the discrepancy between tutor beliefs and tutor behaviour. Mixed methods were used to gain in-depth understanding of why tutors behaviour differs from tutor beliefs (Dolmans et al., 2005). Data was collected in three phases using an explanatory sequential design (Creswell, 2014). In the first phase tutor beliefs about teaching and learning were identified. In May 2014, teachers of the hospitality program were asked to fill in the questionnaire 'Beliefs about Teaching and Learning'. In the second phase tutor behaviour was identified. In September 2014, tutors of a second year program module were asked to participate in an observation study. In the third phase, two weeks after the observations, semi-structured individual interviews with the observed tutors were held to gain insight into the gap between tutor beliefs and tutor behaviour.

### **3.2.3 Participants**

#### **Beliefs about teaching and learning**

Participants were 83 teachers from a Hospitality Management program; 66 teachers received a personal invitation to fill in the questionnaire. The remaining 17 teachers were not available at the time of this study. All teachers in this program regularly fulfil the tutor role. At the beginning of their career at the University all teachers participated in a two-day training about PBL. The questionnaires were returned by 57 teachers (26 male and 31 female). The mean age of the teachers was 46.2 years (SD 11.01). The average years of teaching experience was 15 years (SD 8.96), 23% were teachers with a hospitality-specific discipline (e.g., food and beverage, housekeeping and front-office) and 77%

were teachers from other disciplines (e.g., marketing, management, communication, languages, career development, economics and statistics).

**Tutor behaviour**

Twelve tutors of the second year program module ‘Performance in Hospitality’ were invited to participate in an observation study that aimed at analysing tutor behaviour during a PBL session. There were three reasons to choose to study this second year module: (1) second year students already have one year of experience with PBL, (2) there is an indication that second year students endorse constructivist conceptions more than first year students (Otting & Zwaal, 2011) and (3) the coordinators of this module already made the decision to record their PBL sessions before the researchers approached them.

Seven tutors participated in this part of the study, three males and four females. Absenteeism, new tutors, and the rescheduling of sessions were all reasons why the other five tutors were unable to participate in this part of the study. The average age of these participants was 42.6 years (SD 9.51). The number of years of experience in PBL ranged from 1 to 14 years (Mean 7 years, SD 4.18). Three tutors had a hospitality-specific discipline background and four tutors came from other disciplines.

**Table 3.1. Characteristics of Observed Tutors and Non-observed Tutors**

	Observed tutors n = 7		Non-observed tutors n = 50	
Male	3	43%	23	46%
Female	4	57%	27	54%
Age	42,6	SD 9.51	46,7	SD 11.15
Experience	7	SD 4.18	15	SD 8.96
Hospitality specific discipline	3	43%	10	20%
Other disciplines	4	57%	40	80%

Table 3.1 shows an overview of the background variables for the observed and non-observed teachers. Comparisons between the observed and non-observed teachers were made using *t*-tests. The *t*-test showed a significant difference in teaching experience between the observed and non-observed tutors: the average for observed tutors was 15 years and the average for non-observed tutors 7 years (*t* = -2.179; *df* = 51; *p* = .034; Cohen’s *d* = .933).

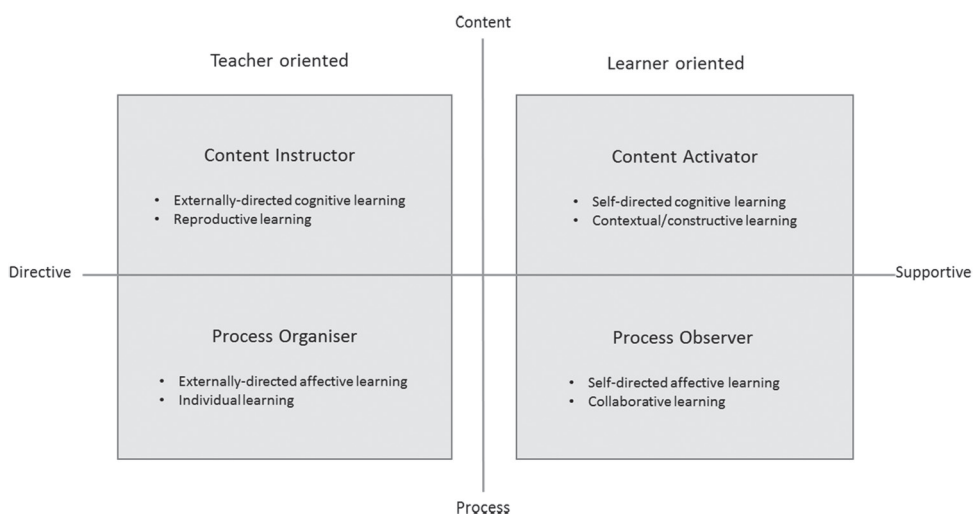
### 3.2.4 Data collection

#### Questionnaire ‘Beliefs about teaching and learning’

Several questionnaires were developed to identify teacher beliefs, for instance Epistemological Beliefs Questionnaire (Schommer, 1990), Teacher Beliefs Survey (Woolley, Benjamin & Williams Woolley, 2004), and the questionnaire ‘Beliefs about Teaching and Learning’ (Meirink et al., 2009). In this study the questionnaire ‘Beliefs about Teaching and Learning’ was used because this questionnaire clearly distinguished teacher-oriented (externally-directed, reproductive and individual learning) and learner-oriented beliefs (PBL core principles; self-directed, constructive/contextual and collaborative learning) and seemed therefore most applicable for this study. The questionnaire was developed for secondary school teachers. Minor adjustments were made in the way items were formulated (e.g., pupil was changed to student and teacher was changed to tutor).

In order to compare tutor beliefs and tutor behaviour, the items of the questionnaire were divided into two teacher-oriented and two learner-oriented categories. The categories were based on two dimensions: directive versus supportive dimension and content versus process dimension (see Figure 3.1). These categories were based on the work by Bolhuis and Voeten (2007), Hoekstra et al., (2009), Jacobs, Van Luijk, Galindo-Garre, Muijtjens, Van der Vleuten, Croiset and Scheele (2014) and Vermunt and Verloop (1999).

**Figure 3.1. Tutor Categories and Learning Principles**



The questionnaire consisted of 60 questions separated into two categories: 27 teacher-oriented questions (TO) and 33 learner-oriented questions (LO). Teacher-oriented questions were divided into 13 content instructor (externally-directed cognitive learning and reproductive learning) and 14 process organiser (externally-directed affective learning and individual learning) items. Learner-oriented questions were divided into 19 content-activator (self-directed cognitive learning and constructive learning) and 14 process-observer (self-directed affective learning and collaborative learning) items (see Table 3.2). A five-point Likert scale was used (1 absolutely disagree to 5 = absolutely agree). Background variables like gender, age, discipline and teaching experience were included as well.

**Table 3.2. Overview Questionnaire: Categories and Learning Principles**

	Learning Principles	Number of items	Example item
<b>Teacher-oriented</b>		<b>27</b>	
Content Instructor	Externally-directed cognitive	6	<i>Students learn better if I check whether they understand the subject matter sufficiently.</i>
	Reproductive	7	<i>It is important that students obtain as much as possible factual knowledge about a certain subject matter.</i>
Process Organiser	Externally-directed affective	7	<i>It is important that I help students to focus on a certain subject matter</i>
	Individual learning	7	<i>Students learn better if they get feedback individually.</i>
<b>Learner-oriented</b>		<b>33</b>	
Content Activator	Self-directed cognitive	9	<i>It is important that students monitor themselves whether the learning process proceeds according to plan.</i>
	Constructive	10	<i>Students learn better if they need to think themselves how to apply the theory.</i>
Process observer	Self-directed affective	7	<i>It is important that I discuss with students how they handle their feelings of uncertainty.</i>
	Collaborative	7	<i>Students learn better if they work on assignments together with peers.</i>



## Observations

To identify tutor behaviour most researchers used tutor self-reports or questionnaires (De Grave, Dolmans, & Van der Vleuten, 1999; Postareff et al., 2007). Williams (2011) used tutor self-reports and a student tutor assessment questionnaire and demonstrated differences between how students perceived tutor behaviour and how tutors perceived their own behaviour. For instance, tutors graded themselves significantly higher on learner-oriented guidance strategies compared to students. According to Dolmans et al. (2002) and Boelens, De Wever, Rosseel, Verstraete, and Derese (2015) qualitative studies and methods should be used to explain tutor behaviour in a PBL context. Observations are recommended to gain more insight into the actual tutor behaviour (De Grave et al., 1999).

Seven PBL sessions (one per tutor) with the same problem scenario were observed. The observations were recorded on video and audio and then transcribed. A PBL session was divided into three phases: starting phase (who starts the session?), the main phase, and the evaluation phase (individual and/or group evaluation). Focal sampling was applied and helped to simplify the observations: only verbal interventions of the tutors were coded (Bolhuis, 2000) during the main phase of a PBL session. Verbal interventions were defined as: an episode in which the tutor ‘spoke up’ (Lee et al., 2013). An intervention could include several sentences. Short interventions (e.g., okay or yes) were not taken into consideration, if the intervention was meant as a follow up of a prior intervention.

Although some research has been carried out on tutor behaviour, a clear and consistent observation instrument to analyse tutor interventions based on the learner-oriented PBL principles was not available. Therefore, this study proposed a new instrument to identify and classify teacher- and learner-oriented interventions in a PBL context. Two teacher-oriented (content instructor and process organiser) and two learner-oriented categories (content activator and process observer) were used as observation categories. After four test observations and feedback from a focus group, existing of four tutors of the program, the observation criteria per category were slightly modified. Tutor interventions had an unequivocal relationship to one of the four tutor categories.

- *Content instructor interventions* direct the content by transmitting information and knowledge in an instructional way (Trigwell, Prosser & Waterhouse, 1999). Examples of content instructor interventions are: transmitting knowl-

edge, giving instructions and explanations, presenting, clarifying, offering examples or theory, indicating, checking, summarising, and controlling the input of students.

- *Process organiser interventions* direct the process by structuring and leading the learning process in an effective and efficient instructional way. Examples of process organiser interventions are: leading and explaining the process, supporting students in concentrating and focusing and giving feedback on individual performance.
- *Content activator interventions* support knowledge building by challenging students to choose and apply different learning and thinking strategies. Examples of content activator interventions are: asking questions to activate the prior knowledge of students, encouraging students to construct knowledge, and to stimulating students to involve real-life issues.
- *Process observer interventions* support the process by observing and evaluating the group learning process. Examples of process observer interventions are: stimulating students to monitor the learning and thinking processes and encouraging students to evaluate the collaborative learning process.

### **Semi-structured interviews**

Two weeks after the observations tutors of the observed PBL sessions were interviewed. To explore whether tutors experience PBL and their tutor role as directive or supportive, three open-ended questions, inspired by research of Maudsley (2002) and Vermunt and Verloop (1999), were asked: (1) How would you describe PBL? (2) How do you feel about PBL? (3) What according to you is your tutor style? To explore which factors influenced tutor interventions the following questions, inspired by research of Bolhuis and Voeten (2001) and Lee et al. (2013), were asked: (4) When and why do you intervene? and (5) What difficulties do you experience during your interventions? And to explore whether tutors have a team dialogue about PBL one question, derived of the work of Dolmans et al. (2002) and Windschitl (2002) was asked: (6) Do you discuss the underlying principles of PBL, your interventions during PBL and PBL research findings in your team? Moreover, attention was paid to the results of the questionnaire and the observations of the tutor.

### 3.2.5 Procedure

Management, tutors, and students were informed about the purpose of this study and the confidential treatment of the research data and results. The management team granted permission for the study. Tutors and students cooperated voluntarily, received no compensation and gave their written informed consent.

Two researchers were involved in data collection and data analysis. Both researchers have experience with PBL. One of the researchers is a tutor at the hospitality program. To demonstrate the accuracy of findings mixed methods were used and both researchers independently analysed the data. Participants were asked whether they recognise the major findings (Creswell, 2014).

### 3.2.6 Data analysis

#### **Tutor beliefs: questionnaire ‘Beliefs about teaching and learning’**

To identify tutors’ beliefs the mean scores per learning principle and per tutor category were used. Reliability of the principles and categories were calculated using Cronbach’s alpha. Effect sizes were calculated to quantify the strength of the differences between the categories (Creswell, 2014). Data analysis was carried out using SPSS, version 22.

Tutors were categorised regarding their beliefs (based on mean scores per category) into one of the four categories. Two bipolar dimensions were used: directive versus supportive and content versus process oriented (see Figure 1). The directive versus supportive dimension (DirectiveSupportive, DS) and the content versus process dimension (ContentProcess, CP) were calculated as follows:

- DirectiveSupportive-score = (mean score content activator + mean score process observer) – (mean score content instructor + mean score process organiser). A positive score indicates a supportive orientation, while a negative score indicates a directive orientation.
- ContentProcess-score = (mean score content instructor + mean score content activator) – (mean score process organiser + mean score process observer). A positive score indicates content orientation, while a negative score indicates a process orientation.

The individual DS and CP scores were used to categorise tutors in one of four different tutor categories:

1. Content activator: tutor with a positive score on DS dimension and a positive score on CP dimension.
2. Process observer: tutor with a positive score on DS dimension and a negative score on CP dimension.
3. Content instructor: tutor with a negative score on DS dimension and a positive score on CP dimension.
4. Process organiser: tutor with a negative score on DS dimension and a negative score on CP dimension.

### **Tutor behaviour: observations**

In order to classify the interventions, the type of intervention (content or process oriented) and the way of intervening (directive or supportive oriented) were determined. Tutor interventions were classified in four different categories: content instructor (content and directive oriented), process organiser (process and directive oriented), content activator (content and supportive oriented) and process observer (process and supportive oriented). Two observers independently coded the interventions based on the transcripts. The inter-rater reliability of the observations was .63 (Cohen's Kappa), indicating a substantial agreement (Landis & Koch, 1977).

### **Exploring the gap: interviews**

Interview transcripts were coded using the following themes: tutor role and external factors: student capabilities and PBL curriculum (i.e. quality of the problem scenario, tutor manual, other educational activities, assessment). In addition to these items, interviewers were open to new and unexpected themes in the interview data.

The final step was to explain the discrepancies between tutor beliefs and tutor interventions. Survey data, observations and interview fragments were combined to get an overview of the ways tutors think about teaching and learning, their tutor behaviour and the factors that influence tutor behaviour.

3.3 Results

3.3.1 Tutor beliefs about teaching and learning

Table 3.3 presents an overview of teacher-oriented and learner-oriented beliefs. The mean scores showed that teachers agreed with learner-oriented beliefs. The mean score for learner-oriented beliefs was significantly higher than the mean score for teacher-oriented beliefs ( $t=-13.41$ ,  $df = 55$ ,  $p < .001$ ). Effect sizes showed a large effect (Cohen's  $d = 1.78$ ). Specifically, as can be seen from Table 3.3, the mean scores on content activator and process observer were higher than the mean scores on content instructor and process organiser. The Cronbach's alpha's for the learning principles ranged from .70 to .81 and for the tutor categories ranged from .80 to .85, which indicates they were acceptable to good (Field, 2009). Multivariate analysis indicated a significant difference between the different tutor categories on the questionnaire 'Beliefs about teaching and learning' (Wilks'  $\lambda = .241$ ;  $F=5.178$ ;  $p < .01$ ).

Table 3.3. Teacher-oriented Beliefs and Learner-oriented Beliefs (N=57)

Teacher-oriented beliefs				Learner-oriented beliefs			
Category	Scale	M (SD)	alpha	Category	Scale	M (SD)	alpha
Content Instructor		2.93 (.59)	.85	Content Activator		4.26 (.36)	.83
	Externally-directed learning Cognitive	3.13 (.70)	.80		Self-directed learning Cognitive	4.01 (.41)	.70
	Reproductive Learning	2.77 (.60)	.74		Con-structive Learning	4.39 (.37)	.77
Process Organiser		3.19 (.51)	.80	Process Observer		4.05 (.44)	.81
	Externally-directed learning Affective	3.33 (.53)	.73		Self-directed learning Affective	4.04 (.51)	.74
	Individual Learning	3.04 (.71)	.81		Colla-borative Learning	4.06 (.54)	.79
	Teacher-Oriented	3.06 (.49)	.89		Learner-Oriented	4.15 (.36)	.89

ANOVA showed a significant difference between the categories regarding the DirectiveSupportive dimension ( $F_{(2,47)} = 5.426$ ;  $p = .008$ ) and showed a significant difference between the categories regarding the ContentProcess dimension ( $F_{(2,47)} = 38.338$ ;  $p = .000$ ). More specifically, on the DS-dimension the content instructor scored significantly lower than the other categories and on the CP-dimension the process observer scored significantly lower than the other categories. Effect sizes showed a large effect (DS-dimension:  $\eta^2 = .188$  and CP-dimension =  $\eta^2 = .620$ ), indicating a strong difference between the dimensions (Creswell, 2014).

Regarding the background variables *t*-tests revealed no significant differences in beliefs about teaching and learning in terms of gender, age, teaching experience, and discipline.

Overall, regarding their beliefs, 96% of the tutors could be considered as supportive and 4% of the tutors could be considered as directive, while 51% could be considered as content-oriented and 49% could be considered as process-oriented. More specifically, none of the tutors could be classified as process organisers, 4% of the tutors could be classified as content instructors, 47% of the tutors as content activators and 49% as process observers.

### 3.3.2 Tutor behaviour

The aim of the second part of this study was to identify tutor behaviour. There was no significant difference between the observed and non-observed tutors in terms of teacher-oriented and learner-oriented mean scores regarding beliefs (TO:  $t = .675$ ;  $df = 50$ ;  $p = .882$  and LO:  $t = -.555$ ;  $df = 51$ ;  $p = .652$ ), indicating that observed tutors were representative for the entire group of tutors. Based on their tutor beliefs, three observed tutors could be classified as content activators and four observed tutors could be classified as process observers.

*Starting phase.* Analysis of the observations showed that two tutors (tutors A and B) took the initiative to start the PBL session. In the other five PBL sessions, students took the initiative.

**Table 3.4. Beliefs and Interventions per Observed Tutor**

Tutor	Classification beliefs	Number of interventions	Teacher-oriented interventions			Learner oriented interventions		
			Content Instructor (perc.)	Process Organiser (perc.)	Total TO (perc.)	Content activator (perc.)	Process Observer (perc.)	Total LO (perc.)
A	Process observer	130	44 (34%)	71 (54%)	115 (88%)	13 (10%)	2 (2%)	15 (12%)
B	Process observer	100	27 (27%)	59 (59%)	86 (86%)	8 (8%)	6 (6%)	14 (14%)
C	Process observer	55	26 (47%)	8 (15%)	34 (62%)	19 (35%)	2 (3%)	21 (38%)
D	Content activator	28	3 (11%)	15 (54%)	18 (65%)	4 (14%)	6 (21%)	10 (35%)
E	Content activator	28	11 (39%)	9 (32%)	20 (71%)	7 (25%)	1 (4%)	8 (29%)
F	Content activator	20	8 (40%)	5 (25%)	13 (65%)	7 (35%)		7 (35%)
G	Process observer	17	2 (12%)	11 (65%)	13 (77%)	4 (23%)		4 (23%)
<b>Total</b>		<b>378</b>	<b>121 (32%)</b>	<b>178 (47%)</b>	<b>299 (79%)</b>	<b>62 (16%)</b>	<b>17 (5%)</b>	<b>79 (21%)</b>

TO: Teacher-oriented/ LO: Learner-oriented

*Main phase.* As can be seen Table 3.4 the number of verbal tutor interventions ranged from 17 to 130 interventions during the main phase of the PBL session. In general, tutors demonstrated more teacher-oriented interventions (79%) than learner-oriented interventions (21%). Tutors A and B showed the highest number (more than 80%) of interventions and both preferred teacher-oriented categories (content instructor and process organiser). The interventions of the other five tutors related to content instructor and process organiser were between 62 and 77%.

Table 4.4 shows an overview of beliefs and interventions of the observed tutors. Results of the observations indicated that tutors showed predominantly process organiser and content instructor interventions. Tutor D and G showed relatively more content activator interventions than content instructor

interventions. Although four out of seven tutors were considered as process observers (based on their beliefs), process observer interventions were less common. Five tutors demonstrated some process observer interventions.

*Evaluation phase.* All tutors took the initiative in the evaluation phase of the PBL session. The evaluation phase ranged from five (tutor D) to twenty minutes (tutor G). Only three tutors (C, D, and E) gave feedback on the group process. Tutor C and E also paid attention to individual performance and tutor D only paid attention to group performance. In six out of seven PBL sessions, the tutor mainly gave feedback on individual performance. In five PBL groups the observer gave feedback to peers. One student gave explicit feedback on tutor A during the evaluation phase:

*“From the very first minute we came in here, you (tutor) were acting like the chairperson. Instead of letting the appointed chairperson (a student) welcome and start the session, you started with an announcement and did all the things that the chairperson should do. What I would suggest is that you could help him, instead of just doing it yourself”.*

This student clearly expressed what he expects from a tutor and emphasised the importance of the facilitating role of a tutor.

### **3.3.3 Gap between tutor beliefs and behaviour**

Semi-structured interviews were used to explore the gap between tutor beliefs and interventions. Tutors were invited to give their view on PBL and whether they showed interest in the literature on PBL. Five out of seven tutors expressed they are in favour of PBL and two tutors (B and D) expressed that they have ambivalent feelings about PBL. These two tutors wondered if students gain sufficient knowledge using PBL. None of the tutors reported that they read PBL literature or discussed the underlying principles in team meetings.

#### **Interventions.**

Most tutors felt some tension between content and process interventions. As one interviewee put it:

*“One group of tutors believe that a tutor should have enough content knowledge, the other group of tutors believe that a good tutor needs to give feedback on the process. I constantly jump between these two beliefs” (tutor B).*



Tutors gave the impression that self-confidence in facilitation skills affected this tension.

Two interviewees said:

*“When I discuss process issues with students, I always think, I could also use this time for content issues. Over the years I became more confident, but remain uncertain about the content”* (tutor D).

*“Since I have developed more confidence, I focus more on the process and give more feedback. In the past I used to focus more on the content”* (tutor E).

Four tutors (B, D, F, and G) reported that they struggle with ‘just-in-time’ interventions. They have doubts about when they should intervene. They explained that waiting with intervening encourages students to experiment with their own solutions and enables students to learn from mistakes. Comments of two interviewees illustrate their struggle:

*“I often think it is good that I did not intervene, because students found the solution for the problem by themselves”* (tutor D).

*“When to intervene remains difficult. Normally, I let them go, because it is good that they experience why things went wrong”* (tutor G).

### **Factors influencing interventions.**

The inconsistency between beliefs and interventions may relate to various factors. The results of the interviews identified three distinctive themes: perceived tutor role (preferred learning principle, directive or supportive role, and importance of being a content expert), students’ self-directing capabilities, and the curriculum (use of tutor manual, way of assessment, task structure, and use of other educational methods). Table 3.5 shows an overview per tutor per theme.

**Table 3.5. Factors influencing Interventions per Tutor**

<b>Tutor</b>	<b>Perceived tutor role</b>	<b>Students' Self-directing capabilities</b>	<b>PBL curriculum</b>
A	Positive feelings about PBL Describes tutor role as directive, content focus and experiences the tutor role as heavy. Content expertise is not necessary; however experience in the industry is important. Prefers constructive learning.	Students are not able to master self-directed learning. Students need a clear framework	Description of problem scenario is important (especially relevant for industry).
B	Ambivalent feelings about PBL Describes tutor role as directive, content focus and experiences the tutor role as heavy. Struggles with when to intervene. Content expertise is not necessary, however it enables tutors to check the findings of students. Prefers constructive learning	Students are not able to master self-directed learning.	Description of problem scenario is important. Way of testing influences interventions. Tutor manual guides the interventions.
C	Positive feelings about PBL Describes tutor role as directive, content focus and experiences the tutor role as heavy Content expertise is not necessary; however it enables tutors to check the findings of students. Tutors need to be interested in the subject. Prefers constructive learning		Description of problem scenario is important. Detailed tutor manual is frustrating. Connection with other educational activities important.
D	Ambivalent feelings about PBL Describes tutor role as supportive, process focus. Struggles with when to intervene. Content expertise is necessary. Prefers self-directed learning.	PBL is not suitable for first year students.	Way of testing influences interventions. Tutor manual guides the interventions.
E	Positive feelings about PBL Describes tutor role as supportive, process focus. Content expertise is not necessary; however it enables tutors to check the findings of students. Prefers self-directed learning		Tutor manual guides the interventions.

**Table 3.5. (continued)**

<b>Tutor</b>	<b>Perceived tutor role</b>	<b>Students' Self-directing capabilities</b>	<b>PBL curriculum</b>
F	Positive feelings about PBL Describes tutor role as supportive, process focus. Struggles with when to intervene. Content expertise is not necessary. Prefers self-directed learning	Students need a clear framework.	Description of problem scenario is important. Tutor manual guides the interventions. Connection with other educational activities important.
G	Positive feelings about PBL Describes tutor role as supportive, process focus. Struggles with when to intervene. Content expertise is not necessary however experience in industry is important. Prefers collaborative learning	Confidence in self-directing capabilities of students. PBL is not suitable for first year students.	Way of testing influences interventions. Detailed tutor manual is frustrating. Connection with other educational activities important.

**Perceived tutor role.**

Tutors with more than 50 interventions (A, B, and C) described the tutor role as directive and they expressed that they find it difficult to let go of control. This theme came up in the following examples:

*“I talk a lot; I direct students because they need to learn something, if a tutor does nothing, nothing will happen” (tutor A).*

*“I find it hard to lose control; I would like to be more facilitative” (tutor B).*

These three tutors (A, B, and C) confirmed that they were focused on content. When asked which learning principle they prefer, they mentioned constructive learning as most important. Interestingly, these tutors experienced the tutor role as heavy:

*“After PBL I always feel exhausted. It is so difficult to get students to their destination” (tutor C).*

Four tutors, with less than 30 interventions, described the tutor role as supportive (D, E, F, and G). These tutors were focused on the process. When asked which learning principle they preferred, tutors D, E, and F mentioned the

learning principle self-directed learning. The following examples are related to this theme:

*“Directing means to me that a tutor does too many interventions” (tutor D).*

*“PBL is the process of students; I try to guide from a distance” (tutor E).*

*“The role of the tutor is facilitating and monitoring the process. PBL sessions are not lectures; I’m not the knowledge transmitter” (tutor F).*

Two tutors indicated (A and G) that tutors need practical experience in the hospitality industry, because of this specific module (content: hospitality performance). Tutor D emphasised that content expertise is important. It enables tutors to check the reported findings of students:

*“As an expert you can judge the findings of students and you can stimulate deep learning” (tutor D).*

Three tutors found content expertise irrelevant (B, C, and E), however they also mentioned that content expertise leads to deepening of the content. According to these tutors, there is no relation between content knowledge or practical experience and the number of interventions. In contrast, tutor F explained that less content expertise leads to fewer interventions:

*“If I would have more knowledge, I would have a more directive way of guiding the PBL process” (tutor F).*

### **Self-directing capabilities of students.**

Tutors A and B expressed the belief that students are unable to master self-directed learning. These two tutors had no confidence in the abilities of students. This interpretation differs from the opinion of tutor G who argued that it is important that tutors have confidence in the self-directing skills of students. Talking about this issue, tutors A and F said that students need a clear framework to master self-directed learning:

*“Self-directing is only possible if we give students a framework” (tutor A).*

Self-directing capabilities differ per group. A recurrent theme in the interviews was a sense among tutors that novice groups need more directive tutor

interventions. Tutor D and G mentioned that PBL is not suitable for first year students. According to these two tutors, students need basic skills and knowledge before they are able to analyse problems. As tutor G said:

*“Students can only run after they have learned how to walk. First year students need to learn analysing skills before they can analyse a problem”* (tutor G).

### **PBL embedded in the curriculum.**

A common view among interviewees was that their interventions depend on the way PBL is embedded in the curriculum. According to tutors, fewer teacher-oriented interventions would be needed if a module assignment and other educational activities were connected with PBL and when the problem scenario is clear and relevant for the hospitality industry. There were some negative comments about the way problem scenarios are used in PBL. Some of the scenarios are from textbooks: they do not connect to the experiences of students and do not stimulate students to explore more sources. The following quotes by tutors are examples:

*“The problem scenarios do not stimulate students to search for the real problem, students get lost because of the way the problem is described”* (tutor B).

*“Poor problem scenarios frustrate students and tutors”* (tutor C).

A majority of the tutors reported that they use the tutor manual for their interventions. Some tutors reported that the manual should direct their interventions while other tutors reported that manual should not be necessary. A detailed tutor manual frustrated tutors C and G. Three tutors (B, D, and G) mentioned that the way of testing influences their interventions. They feel pressure because they want to be sure that students receive the information they need for the test:

*“I find it hard to let it go and I tend to give examples to explain the subject. When I do that I certainly know that students received all information they need for a test. I know giving examples is not according to the PBL rules”* (tutor B).

*“I feel responsible for test results of students; I feel a lot of pressure”* (tutor D).

On the other hand, tutor F reported that workshops and lectures are also necessary for sharing knowledge with students. Therefore, she feels no pressure.

## 3.4 Conclusions and discussion

The present study was designed to explore the discrepancy between tutor beliefs about teaching and learning and tutor interventions in PBL. The first question of this study sought to determine the gap between tutor beliefs and interventions. The newly developed tutor categories made it possible to compare tutor beliefs and provide insight into the nature of the tutor interventions. This study indeed demonstrated a discrepancy between tutor beliefs and tutor behaviour and showed that various factors seem to hinder learner-oriented interventions.

### 3.4.1 *Discrepancy between tutor beliefs and tutor behaviour*

The way tutors intervene in a PBL tutorial was not consistent with their espoused beliefs about teaching and learning. In most cases learner-oriented beliefs did not lead to predominantly learner-oriented interventions. The study showed that tutors espouse and believe in self-directed, constructive and collaborative learning and therefore with a supportive tutor style. The results also showed that tutors do partly believe in externally-directed, reproductive and individual learning. Subsequently, they do not completely reject the directive tutor style. A possible explanation for this might be that most tutors were educated in a teacher-oriented educational environment and were not exposed to a learner-oriented way of teaching in their prior education. It seems that this causes deep-rooted teacher-oriented beliefs and that beliefs are difficult to change (Jacobs et al., 2014a). This was also a recurring issue in the interviews. Although tutors regularly made references to the learner-oriented principles, tutors left the researchers with the impression that they constantly moved between teacher-oriented and learner-oriented behaviour. It seems that changes in beliefs do not automatically lead to changes in behaviour.

Though tutor beliefs were categorised as content activators and process observers, the observed tutors mostly employed the teacher-oriented interventions of content instructor and process organiser. Tutors often used a directive tutor style and focused on organising the PBL process, controlling content and transmitting knowledge. Furthermore, tutors mainly gave feedback on the individual learning of students. More specifically, tutors hardly showed any interventions that corresponded to the content activator category and seldom showed interventions that matched the process observer category. This indicates that tutors have more difficulties using the supportive style in guiding the process rather than using the supportive style in guiding the content. Apparently, tutors

experience observing and evaluating the students' learning process as more complex than challenging students to use different learning and thinking strategies.

### *3.4.2 Factors influencing tutor behaviour*

The way tutors interpret their role seems to be related to the quantity and nature of interventions. Tutors who interpret their role as directive showed more interventions and also took the initiative to start the session instead of letting the chairperson do so. It seems that tutors who start the PBL session and thus immediately take over the PBL process, tend to use more teacher-oriented interventions. This obviously requires a lot of energy and indeed, tutors who showed more interventions experience the tutor role as rather heavy. Moreover, the feedback given by one of the students demonstrates that taking over the process from students and making too many interventions may frustrate students. Tutors, who showed fewer interventions, interpret their tutor role as supportive, intervened less and used more learner-oriented interventions (relatively speaking) than tutors who interpret their role as directive.

The three tutors who showed the highest number of interventions prefer constructive learning and feel responsible for students gaining sufficient knowledge. These tutors gave the impression that they had less confidence in students' self-directing and constructive capabilities. As a consequence they transferred knowledge and took over the PBL process. They employed teacher-oriented interventions mostly to 'ensure that students gain sufficient knowledge' (Trigwell & Prosser, 2004). The other four tutors preferred self-directed learning and showed more confidence in the students' self-directing capabilities. This leads, quite obviously, to fewer interventions.

According to some tutors content expertise may lead to a supportive tutor style, but other tutors argued that content expertise leads to a directive tutor style. A tutor with content expertise may use a directive tutor style because he or she feels responsible for transferring his or her expertise. Other tutors with content expertise use a supportive tutor style because content expertise enables them to ask questions to stimulate and support the students' learning process from a 'helicopter view'. These tutors expressed that content expertise gave them more self-confidence. Tutors with more self-confidence showed relatively more learner-oriented interventions. Contrary to findings of Dolmans et al. (2002), tutors with little content expertise mentioned that they tend to use a directive style to make sure they cover the learning content mentioned in the tutor manual. In line

with Maudsley (2002) and Moust et al. (2005), tutors in this study find it difficult to know when and how to intervene. Tutors gave the impression that they do not know how to apply cognitive apprenticeship strategies. Overall, tutors showed a lack of confidence in using learning-oriented interventions.

During the interviews tutors expressed ambivalent feelings about applying learner-oriented interventions. For instance, tutors said they had the feeling that the learner-oriented approach to teaching requires them to apply as few as possible interventions and that the interventions should only be related to supporting the process. Some tutors argued that if they spend too much time supporting the process, students are not able to gain enough knowledge. They think that teacher-oriented interventions are less time consuming than learner-oriented interventions. Moreover, two tutors explicitly expressed that PBL is not suitable for novice students. In their view, students need 'basic knowledge' before they are able to construct knowledge and are not able to master self-directed learning. Even though these tutors agree with the learner-oriented beliefs, their way of thinking about PBL seems to support teacher-oriented interventions rather than learner-oriented interventions.

According to tutors, the way PBL is integrated into the curriculum has an impact on the tutor interventions. The way in which PBL is embedded in the current curriculum suggests that there is no problem-based learning environment but rather a problem-solving learning environment (Lindblom-Ylänne et al., 2006; Savin-Baden, 2000). The hybrid PBL curriculum has a number of teacher-oriented components. These components do not contribute to self-directed and constructive learning. Tutors, for instance, determine the knowledge students have to acquire, the literature they have to read and the knowledge they need to solve the problem. Moreover, tutors mentioned other factors related to the curriculum: the way other educational activities are integrated into a module, the quality of the problem scenario, detailed information in the tutor manual and assessment methods which do not match with the PBL curriculum. For example, a reproductive knowledge test 'forces' tutors to direct students in a particular content direction and 'forces' tutors to teach. Moust et al. (2005) defined this as the 'coverage virus'. Furthermore, a poorly-written problem scenario (e.g., scenarios based on book chapters) and a detailed tutor manual (in which specific problem statement, learning outcomes and specific theory are given) 'force' tutors to apply more teacher-oriented interventions.



Tutors recognise the lack of integration of PBL in the curriculum, but feel that they are unable to solve that problem. Tutors also expressed a lack of collective learning and expressed they rarely make their beliefs and behaviour explicit. Tutors seldom experiment with learner-oriented interventions and seldom evaluate their own opinions and barriers with others.

### **3.4.3 Conclusion**

Even experienced tutors at a Dutch university who adopted a hybrid PBL curriculum approach more than twenty-five years ago seemed to struggle with their tutor role. This study demonstrated that intrinsic factors and extrinsic factors have impact on the way tutors intervene. The way the curriculum is designed as well as the tutors' confidence in students' capabilities and confidence in their own facilitation skills explain tutor interventions better than the beliefs about teaching and learning. Moreover, tutors rarely have dialogues with others about the underlying philosophy of PBL.

### **3.4.4 Contributions and limitations**

This study created a deeper understanding of the discrepancies between tutor beliefs and behaviour regarding PBL principles. This study provides insight into the interventions tutors use and explores why tutors apply these interventions. Tutors and management should be aware that only changing beliefs is not sufficient. Reflection on beliefs and on the way PBL is imbedded in the curriculum are needed to support learner-oriented tutor behaviour as well (Mälkki & Lindblom-Ylänne, 2011; Moust et al., 2005). And perhaps tutors are going back to being learner themselves- where they experience PBL for themselves.

Observations might support tutors to become aware of their own behaviour and might support tutors to compare their behaviour with their own beliefs. An instrument to compare beliefs and behaviour in a PBL curriculum was not available. The newly developed instrument used here is a noteworthy contribution to previous research. It makes it possible to compare tutor beliefs and behaviour in a clear and consistent way. The observed tutors did recognise the description and observation criteria related to the four tutor categories. Therefore, they would now be able to use the instrument as a feedback instrument, individually or collaboratively.

A limitation of this study was that although the questionnaire identifies tutor beliefs, tutors expressed beliefs in the interviews that were not always congruent with their individual results on the questionnaire. Several studies have

reported that defining and measuring fundamental beliefs is difficult (Ertmer, 2005). Moreover, university's educational policy with its emphasis on learner-oriented principles might influence teachers to give 'socially desirable responses' in self-reports and questionnaires (Williams, 2011). Therefore, in this study interviews were used to understand and explore tutors' beliefs.

A second limitation of this study is that only seven tutors were observed in one specific module. Observations of tutor interventions in other modules and programmes might give different or confirming results. Another limitation of this study was that only verbal interventions in the main phase were observed, however non-verbal interventions may very likely influence students as well.

### 3.4.5 *Recommendations*

Although Cohen's Kappa indicated substantial reliability, further research is needed to establish the inter-rater agreement of the newly-developed observation instrument. It is recommended that more observers and more observational studies in different programmes use this instrument and evaluate it. Also programmes based on teacher-oriented principles could be included.

Qualitative research is needed to gain more insight into the way teachers change their beliefs and behaviour. As Ertmer (2005, p. 36) stated succinctly: "The one cannot change without considering the other". To stimulate fundamental changes in tutor behaviour two important recommendations could be made. The first recommendation is that the universities create possibilities for tutors to experiment using learner-oriented interventions with the goal to make sense of their beliefs about teaching and learning and their tutor behaviour (Kim et al., 2013). In addition the university should create opportunities where tutors may reflect on actual tutor experiences (Lodders, 2013). Dialogue and reflection support tutors in using interventions that are congruent with the underlying philosophy of PBL (Dolmans et al., 2002; Goh, 2014). Using experiences in a collective learning environment – for instance a narrative approach to explore identity – stimulates tutors to change their professional identity and supports tutors not to fall back on a teacher-oriented approach to teaching, the way they are used to (Meijers & Lengelle, 2012)

It is important that the management of programmes supports these initiatives. Thoonen, Slegers, Peetsma and Geijzel (2011) showed that communities of practice and the individual coaching of teachers lead to a dialogue about teaching and learning and to critical reflection on teaching behaviour. Hendry (2009)

and Boelens et al. (2015) recommend the participation in a training program that considers various strategies to support the PBL process. Besides implementing professional development for the tutors, the second recommendation is that managers should give more credibility to the tutor's perspectives and discuss with them to what extent their teaching content is or is not conducive to PBL. Some elements of the curriculum invite teachers to using a directive tutor style. In its ideal form, PBL is based on an educational philosophy that is reflected in an integrated approach to the curriculum.

In short, to reduce the gap between tutor beliefs and behaviours, managers and teachers should explore the way PBL is embedded in the curriculum and should stimulate the dialogue about the tutor beliefs and the tutor role in a PBL environment.



## 4. Collective Learning, Teacher Beliefs and Teaching Behaviour in Management and Social-Educational University programmes

This chapter has been submitted to an international journal:

Assen, J. H. E., Meijers, F., Zwaal, W., & Poell, R.F. Collective Learning, Teacher Beliefs and Teaching behaviour in Management and Social Educational programmes.

## Abstract

An increasing number of universities opted for a learner-oriented approach to teaching. Collective learning is regarded as a way to support teachers to enhance a learner-oriented approach. This explanatory and comparative study explores whether and how collective learning is related to both learner-oriented teacher beliefs and teaching behaviour. Teachers from management and social-educational programmes at a Dutch University of Applied Sciences participated in this study. Questionnaires were used to measure their perceived level of collective learning and beliefs about teaching and learning. Observations were used to determine teaching behaviour. Results indicated that teachers of both programmes generally agreed with learner-oriented beliefs but demonstrated predominantly teacher-oriented behaviour and showed a positive relation between collective learning and learner-oriented beliefs. Teachers in social-educational programmes perceived a significantly higher level of collective learning than teachers in management programmes. Nevertheless, no significant differences in beliefs and behaviour between the programmes were found. This study was not able to confirm that teachers in programmes who perceive a higher level of collective learning hold more similar beliefs, demonstrate more similar teaching behaviour and show a smaller gap between beliefs and behaviour. In further studies, qualitative instruments could be used to explore to what extent teachers collectively develop their beliefs and behaviour.

## 4.1 Introduction

An increasing number of Universities of Applied Sciences (offering higher vocational educational and training) in the Netherlands have adopted a learner-oriented approach to teaching. Research showed that a learner-oriented approach to teaching, characterised by self-directed, constructive, contextual and collaborative learning, motivates students to engage in higher order learning (Dolmans, De Grave, Wolfhagen, & Van der Vleuten, 2005; Moust, Van Berkel, and Schmidt 2005; Postareff, 2007; Ronfeldt, Owens Farmer, McQueen, & Grissom. 2015) and enables students to develop conceptual, analytical, self-directing and interpersonal skills (Hmelo-Silver & Barrows 2008). These competencies are needed in the complex and quickly changing 21<sup>st</sup> century (Bolhuis and Voeten 2001; Moust, Van Berkel, and Schmidt 2005).

A learner-oriented approach to teaching requires from teachers a supportive teaching style. As facilitator or activator a teacher uses teaching strategies such as modelling and coaching. Teachers seem to ‘struggle’ with this approach (Bakkenes, Vermunt, & Wubbels 2010; Windschitl, 2002). In addition, teachers who agree with learner-oriented principles predominantly demonstrate teacher-oriented behaviour (Assen, Meijers, Otting, & Poell, 2016; Hoekstra, Brekelmans, Beijaard, & Korthagen, 2009; Windschitl, 2002). Even experienced teachers have difficulties with learner-oriented teaching strategies and tend to fall back on a conventional, teacher-oriented approach (Hung, 2011; Windschitl, 2002). Hence, there is a discrepancy between teacher beliefs and teaching behaviour (Assen et al., 2016). The shift to a learner-oriented approach involves more than changing teaching methods; it requires a development of a different ‘mode of thinking’ (Postareff, 2007, p. 65), which is a challenging and intensive process (Postareff, Lindblom-Ylänne, & Nevgi 2007; Williams 2011).

Collective learning can motivate teachers to develop their beliefs about teaching by making teachers’ beliefs about teaching and learning explicit through reflection on their teaching behaviour (Grangreat & Gray 2007; Hoekstra et al., 2009; Postareff, 2007). Collective learning stimulates a dialogue about beliefs and behaviour with other teachers (Hoekstra et al., 2009; Meirink, Meijer, & Verloop, 2007) and contributes to mutual understanding and construction of knowledge (Van den Bossche, Gijsselaers, Segers, & Kirschner, 2006; Watson & Marsick 1999), which may lead to long-term changes in teaching behaviour (Lodders, 2013).

Previous studies demonstrated that collective learning can have an impact on teacher beliefs and on teaching behaviour (Hoekstra et al. 2009; Meirink et al., 2009), however, no prior research was found that investigated whether collective learning can reduce the discrepancy between teacher beliefs and behaviour. Therefore, this study aims to investigate whether and how collective learning is related to teacher beliefs and teaching behaviour.

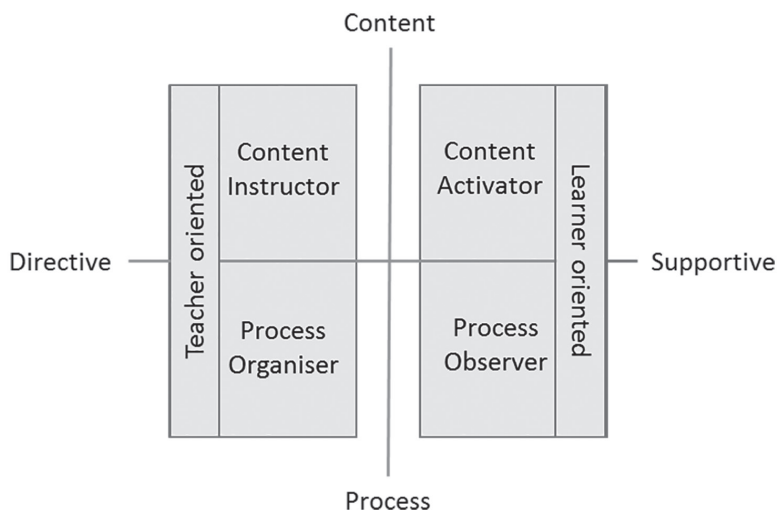
#### *4.1.1 Teacher beliefs and teaching behaviour*

Teacher beliefs are considered to be substantial predictors of teaching behaviour (Hoekstra et al., 2009; Mälkki & Lindblom-Ylänne, 2011). Several studies paid attention to teachers' beliefs about teaching and learning, and to teaching behaviour (Bolhuis & Voeten 2007; Hoekstra et al., 2009; Norton et al., 2005). Most studies distinguished two approaches: the teacher-oriented and the learner-oriented approach to teaching (Bolhuis & Voeten 2007; Hoekstra et al., 2009, Meirink et al., 2009; Savelsbergh, Van der Heijden, & Poell 2009). A teacher-oriented approach to teaching focuses on externally-directed, reproductive and individual learning. Teachers apply a directive style and concentrate on knowledge transmission and knowledge reproduction. In a learner-oriented approach to teaching teachers apply a supportive style (Hattie, 2009). They stimulate students to take responsibility for their learning process, activate knowledge building, observe the students' learning strategies and encourage students to evaluate their own learning process (Bakkenes, Vermunt, & Wubbels 2010; Hmelo-Silver & Barrows, 2008).

Several attempts have been made to investigate how teacher beliefs influence teaching behaviour. However studies showed it is difficult to relate beliefs to behaviour (Bolhuis & Voeten, 2001; Postareff, 2007). To measure and compare teacher beliefs and teaching behaviour, Assen et al., (2016) made a distinction between two teacher-oriented categories (i.e. content instructor and process organiser) and two learner-oriented categories (i.e. content activator and process observer) (see Figure 1). These categories emphasise that content and process are important aspects of both approaches and that the guiding style determines whether teachers show a learner-oriented or teacher-oriented approach to teaching.



**Figure 4.1. Teaching Categories**



- The content instructor beliefs and behaviour focus on externally-directed learning (cognitive learning) and reproductive learning. Content instructors prefer a directive style to guide knowledge development.
- The process organiser beliefs and behaviour focus on externally-directed learning (affective learning) and individual learning. Process organisers prefer a directive style to guide the learning process.
- The content activator beliefs and behaviour focus on self-directed (cognitive learning) and constructive learning. Content activators prefer a supportive style to guide knowledge construction.
- The process observer beliefs and behaviour focus on self-directed (affective learning) and collaborative learning. Process observers prefer a supportive style to facilitate the learning process.

#### **4.1.2 Collective learning**

Lodders (2013) examined collective learning in higher education and defined collective learning “as the work-related processes that arise when the members of a collective collaborate and consciously strive for common learning and/or working” (p. 15). She identified four factors of collective learning: (1) shared vision, (2) dialogue and inquiry, (3) collective action, and (4) evaluation and

reflection. A shared vision leads to a mutual understanding of what teachers would like to create together (Decuyper, Dochy, & Van den Bossche, 2010). The second factor, dialogue and inquiry, indicates that teachers give meaning to the generated information, their own assumptions and assumptions of others about curriculum development and facilitation strategies (Cunliffe, 2004). The third factor, collective action, is a result of the dialogue and inquiry process, which is proven to be necessary in changing teaching behaviour (Lodders, 2013). Decuyper et al. (2010) and Thoonen, Sleegers, Peetsma, & Geijsel, (2011) emphasise the fourth factor, evaluation and reflection. The assumption here is that teachers evaluate and reflect on theories, practices, policies, various point of views and do not avoid conflicting issues (Cunliffe, 2004; Watson & Marsick, 1999). Overall, these four factors are necessary for the collective learning process and enable teachers to become aware of and reflect on their own beliefs and behaviour (Postareff, 2007).

Research showed a lack of collective learning in higher education (Holyoke, Sturko, Wood, & Wu, 2012; Vangrieken, Meredith, Packer, & Kyndt, 2015) because teachers are more engaged in information exchange than in dialogue and reflection (Lodders, 2013). Moreover, Postareff (2007), Trigwell and Prosser (2004) and Van Veen and Sleegers (2006) demonstrated, using qualitative research methods, that teachers who show predominantly teacher-oriented behaviour are less likely to bring up and question their own beliefs about teaching and learning and to reflect on their own teaching behaviour than teachers who show predominantly learner-oriented teaching behaviour.

Kuijpers and Meijers (2009; 2012) showed that, compared to those in management programmes, students from social-educational programmes perceived their teachers as more able to stimulate them to be reflective and active (i.e. learner-oriented). Teachers who perceive a higher level of collective learning are more likely to demonstrate learner-oriented behaviour; therefore, collective learning may stimulate teachers to use learner-oriented teaching strategies (Postareff, 2007; Van Veen & Sleegers, 2006). Indeed, it was expected that teachers from social-educational programmes would perceive a higher level of collective learning and that they show more congruence between their beliefs and behaviour (Winters, 2012).

### 4.1.3 *Purpose and focus of this study*

The first aim of this study was to identify teachers' beliefs and teaching behaviour and to explore whether there was a discrepancy between the two. The second aim was to investigate the relationship between collective learning and specific categories of beliefs and behaviour, in particular learner-oriented categories, as these are emphasised by many universities and researchers nowadays (Bolhuis & Voeten, 2007; Hoekstra et al., 2009, Meirink et al., 2009). No prior research was found that investigated whether collective learning can reduce the discrepancy between teacher beliefs and behaviour. Therefore, the third aim was to investigate whether a higher level of collective learning correlates with a smaller discrepancy between teacher beliefs and behaviour.

Although research has been carried out on collective learning, teachers' beliefs and teaching behaviour separately, there is little quantitative analysis on the relationships between collective learning, teachers' beliefs, and teaching behaviour. In addition, the present study is among the first to investigate the relationship between collective learning and the discrepancy between teacher beliefs and behaviour. Moreover, this study intends to make a contribution to the extant literature that is related to the method of data collection. Most studies so far have used questionnaires or self-reports to identify teaching behaviour (Hoekstra et al., 2009; Meirink et al., 2009; Postareff, 2007; Williams, 2011). The current study, however, applies classroom observations to assess actual teaching behaviour.

## 4.2 Methods

### 4.2.1 *Context*

The current study was conducted at a Dutch University of Applied Sciences. More than 25 years ago this university adopted a Problem-Based Learning (PBL) approach to teaching. The pillars of PBL are the learner-oriented principles: self-directed, constructive, contextual and collaborative learning. Next to the PBL sessions, teacher-oriented lectures and workshops are offered to support students to solve the real-world problems. This indicates that the university has adopted a hybrid PBL curriculum (Hung, 2011). In a PBL session, a group of 12 students meet twice a week in 90-minute sessions. Students address real-world problems by activating their prior knowledge and by collaboratively elaborating on prior knowledge. In PBL, teachers fulfil the role of tutor and are expected to apply learner-oriented interventions. The primary task of the tutor is to facilitate

the students' learning process by supporting them in knowledge construction (Hung, 2011). Tutors meet each other once a week to share experiences and to reflect on their teaching strategies.

#### 4.2.2 *Design*

An explanatory and comparative study was chosen to investigate the relationships between collective learning, beliefs and behaviour (Creswell, 2014). The study was conducted in two phases. In the first phase the level of perceived collective learning and teachers' beliefs about teaching and learning were measured using two questionnaires. In the second phase observations of PBL tutorials were used to identify teaching behaviour.

#### 4.2.3 *Participants*

Teachers from two social-educational programmes (Social Work and Teacher Education for Primary Schools) and two management programmes (Hospitality Management and Tourism Management) were invited to participate. In total 90 teachers participated: 58 teachers from management programmes and 32 teachers from social-educational programmes. The response rate was 75% for Hospitality Management, 45% for Tourism Management, 57% for Social Work, and 48% for Teacher Education for Primary Schools. All teachers filled in two questionnaires during a team meeting: the 'Collective Learning Questionnaire' (Lodders, 2013) and the 'Beliefs about Teaching and Learning Questionnaire' (Hoekstra et al., 2009; Meirink et al., 2009).

Subsequently, a subset of 22 teachers, tutors in second year modules, participated in the observational phase of this study. The reason for selecting second year modules was that second year students have gained experience with PBL, enabling tutors to fully apply its learner-oriented principles.

The number and characteristics of the observed teachers are included in Table 4.1. No significant differences regarding gender and age were found between observed and non-observed teachers (Gender:  $\chi^2 = .268$ ;  $p = .605$  and Age:  $t(88) = -.430$ ;  $p = .668$ ), nor between the two programmes (Gender:  $\chi^2 = .129$ ;  $p = .719$  and Age:  $t(88) = -.930$ ;  $p = .355$ ).

Educational leaders of the two programmes granted permission for the study. Teachers and students gave their written informed consent and participation was voluntary.

Two researchers were involved in the data analysis, both researchers independently analysed the data.

**Table 4.1. Characteristics of Observed and Non-Observed Teachers per Programme**

Programme		N	Gender		Age	
			Male	Female	M	SD
Management	Non-Observed	46	19 (41%)	27 (59%)	46.59	10.23
	Observed	12	5 (42%)	7 (58%)	41.33	10.83
	Total	58				
Social-Educational	Non-Observed	22	8 (36%)	14 (64%)	46.28	14.21
	Observed	10	4 (40%)	6 (60%)	51.09	11.87
	Total	32				

4.2.4 Instrumentation

Teacher beliefs

The questionnaire ‘Beliefs about teaching and learning’ was used to identify whether teachers agree with teacher-oriented and/or learner-oriented beliefs (Hoekstra et al., 2009; Meirink et al., 2009). This 60-item questionnaire was divided into 27 teacher-oriented and 33 learner-oriented items. Teacher-oriented items were divided into 13 *content instructor* (externally-directed cognitive learning and reproductive learning) and 14 *process organiser* (externally-directed affective and individual learning) items. Learner-oriented items were divided into 19 *content activator* (self-directed cognitive and constructive learning) items and 14 *process observer* (self-directed affective and collaborative learning) items (Assen et al., 2016). A 5-point Likert-scale was used (1=totally disagree to 5=totally agree).

Teaching behaviour

Observations were used to measure whether teachers demonstrated teacher-oriented or learner-oriented behaviour. One PBL session per teacher was video- and audio-recorded. Transcriptions were made of all sessions. The unit of analysis was teachers’ verbal interventions ranging from one word to several sentences. If an intervention was a follow-up to a prior intervention, it was not defined as a new intervention. Moreover, teacher interventions in the starting phase (who started the session?) and feedback from teachers in the final phase (feedback on individual and/or group performance?) were observed.

## Collective learning

Lodders (2013) operationalised collective learning for the educational sector, therefore the 27-item 'Collective Learning Questionnaire' was used to identify to what extent teachers perceive collective learning in their programme. The items were divided into the four categories: *shared vision* (7 items), *dialogue and inquiry* (6 items), *collective action* (6 items), *evaluation and reflection* (8 items). A 4-point Likert-scale was used (1=strongly disagree to 4=strongly agree).

### 4.2.5 Analysis

Several analyses were conducted to investigate the relationship between perceived collective learning, teacher beliefs about teaching and learning, and teaching behaviour. Firstly, relevant descriptive statistics were calculated for collective learning overall. In addition, means and standard deviations of teacher beliefs and the number of observed teacher interventions per category were calculated. Secondly, mean scores of perceived collective learning factors were calculated per programme. Thirdly, differences in teacher beliefs, teaching behaviour and collective learning between the two programmes were analysed by applying independent sample t-tests, while simultaneously using the F-test of variance to check the similarity in beliefs and similarity in behaviour among teachers in a programme. In addition, to determine the width of the gap between beliefs and behaviour per teacher, the Squared Euclidean Distances between standardised scores on beliefs and behaviour of each observed teacher were calculated. Finally, correlations between collective learning and teacher beliefs and teaching behaviour per programme were calculated and the relationship between collective learning and the gap between beliefs and behaviour per programme was calculated.

To analyse teachers' beliefs, mean scores for both teacher-oriented categories (process organiser, content instructor) and for both learner-oriented categories (process observer and content activator) were used to classify teachers, with regards to their beliefs, into one of the four categories. To analyse teaching behaviour, verbal tutor interventions were coded using teacher-oriented and learner-oriented categories. The first step in this process was to determine the type of intervention: content- or process-oriented. The second step was to determine the nature of the teaching style: directive or supportive. The third step was to classify the intervention in one of the four categories: content instructor (content and directive), content activator (content and supportive), process organiser (process and directive) and process observer (process and supportive). Two

observers, both experienced PBL tutors, coded the interventions. After individually coding the first seven transcripts, the observers compared and discussed their results in order to clarify and calibrate the coding process (Aarnio et al., 2014). The inter-rater agreement was acceptable ( $\kappa = .63$ ). Each observer also independently coded the rest of the transcripts, which was followed by a consensus meeting to discuss remaining discrepancies.

The mean scores of the beliefs per category and the number of interventions per category of observed teachers were used to determine the position of the teacher regarding their beliefs and behaviour on the horizontal axis (Directive versus Supportive, DS-score) and vertical axis (Content versus Process, CP -score). The score on the horizontal (X) axis distinguishes between the supportive versus the directive teaching style. The score on the vertical (Y) axis separates the content-oriented from the process-oriented teachers. Using this approach all teachers were classified regarding beliefs and behaviour in one of the four quadrants of Figure 1.

### 4.3 Results

#### 4.3.1 Teacher beliefs

**Table 4.2. Means and Standard Deviations of Teacher Beliefs**

Beliefs	Total n=90		Management n=58		Social- Educational n=32		Levene's Test for equality of variances	
	M	SD	M	SD	M	SD	F	Sig.
<b>Teacher-oriented</b>	<b>3.17</b>	<b>.40</b>	<b>3.17</b>	<b>.40</b>	<b>3.19</b>	<b>.42</b>	<b>.325</b>	<b>.570</b>
Content instructor	3.08	.47	3.04	.45	3.15	.50	.914	.342
Process organiser	3.27	.42	3.29	.44	3.24	.39	.615	.435
<b>Learner-oriented</b>	<b>4.10</b>	<b>.42</b>	<b>4.06</b>	<b>.45</b>	<b>4.21</b>	<b>.35</b>	<b>.329</b>	<b>.568</b>
Content activator	4.20	.43	4.16	.46	4.28	.37	.047	.829
Process observer	3.99	.46	3.93	.49	4.11	.37	1.587	.211

Note 1: Cronbach's alpha: Content instructor = .832; Process organiser = .775; Content activator = .832; Process observer = .854.

Note 2: All variables were scored on a 5-point Likert scale.

As shown in Table 4.2, teachers prefer learner-oriented beliefs above teacher-oriented beliefs. The mean scores of *content activator* and *process observer* were higher than the mean scores of *content instructor* and *process organiser*. Teachers expressed significantly stronger agreement with learner-oriented beliefs than with teacher-oriented beliefs ( $t(88) = -16.750$ ;  $p = .000$ ; Cohen's  $d = 1.77$ ).

No significant differences were found between the programmes, neither on learner-oriented ( $t(88) = -1.592$ ;  $p = .115$ ) or teacher-oriented ( $t(88) = -.290$ ;  $p = .772$ ) beliefs overall, nor for any of the categories. Teachers of social-educational programmes do not agree more with learner-oriented beliefs than teachers of management programmes do.

### 4.3.2 Teaching behaviour

Four examples of verbal interventions (one from each category) are reported below to illustrate how interventions are coded. These examples are segments of teachers' practices (Kemmis, Heikinnen, Fransson, Aspfors, & Edwards-Groves, 2014).

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Episode 1 (management programme):

Tutor: *"So team manager is a manager position and the tasks of this manager need to be divided".*

Student: *"Okay so a team manager is one of the managers in an organisation?"*

Tutor: *"Yeah, so let's put team manager and CEO in the same category. Marketing and entertainment manager is also important."*

The type of intervention was content-oriented and the teacher style directive. The teacher gave information and directed students to a certain subject. The type of intervention was a content instructor intervention.

Episode 2: (social-educational programme)

Student: *"Who of you was asked to explain assignment two?"*

Tutor: *"I would like to interrupt, please add your homework assignments to the meeting minutes, so every student is able to read it. And also add the links to the minutes".*



This type of intervention was process-oriented and the teacher style directive. The teacher, instead of students, organised the process. The intervention was a process organiser intervention.

### Episode 3: (social-educational programme)

Student: *"What does day care mean for disabled children?"*

Tutor: *"Do you have experiences, for example from your volunteer work, or internship with regard to this subject?"*

Student: *"Yes, I have experiences in my volunteer work."*

Tutor: *"Can you explain your role as supervisor of these children?"*

This type of intervention was content-oriented and the teacher style supportive. The teacher asked for own experiences, asked student to apply their own experiences to the context. This intervention was a content-activator intervention.

### Episode 4 (management programme):

Tutor: *"Can I ask you, what are you doing at this moment?"*

Student: *"We are formulating the problem statement."*

Tutor: *"Can you explain why you use the keywords? Do the keywords help you to formulate a statement and is this the way it works for you?"*

The type of the intervention was process-oriented and the teacher style was supportive. The teacher asked students to explain he analyse technique they use to formulate a problem statement. This intervention was a process observer intervention.

An overview of the average number of teacher interventions per category is presented in Table 4.3. The number of interventions ranged from 17 to 130 in management programmes and from 24 to 104 in social-educational programmes.

**Table 4.3. Number of Teacher Interventions Observed**

Interventions	Total n=22		Management n=12		Social- Educational n=10		Levene's Test for equality of variances	
	M	SD	M	SD	M	SD	F	Sig.
<b>Teacher-oriented</b>	<b>41.5</b>	<b>26.5</b>	<b>37.8</b>	<b>31.5</b>	<b>46.1</b>	<b>19.6</b>	<b>.282</b>	<b>.601</b>
Content instructor	16.1	11.3	16.6	12.3	15.6	10.6	.673	.422
Process organiser	25.4	17.9	21.2	21.1	30.5	12.4	.916	.360
<b>Learner-oriented</b>	<b>11.1</b>	<b>6.5</b>	<b>9.6</b>	<b>5.4</b>	<b>13.0</b>	<b>7.4</b>	<b>.750</b>	<b>.397</b>
Content activator	9.3	5.8	7.9	4.7	11.0	6.9	1.674	.211
Process observer	1.8	2.3	1.7	2.2	2.0	2.5	.464	.503

Table 4.3 illustrates that teacher-oriented interventions (*content instructor* and *process organiser*) occurred more frequently than learner-oriented interventions (*content activator* and *process observer*). Teachers applied more process interventions than content interventions. In particular directive *process organiser* interventions were most frequently applied. Supportive process observer interventions on the other hand, were hardly applied and not all teachers applied *process observer* interventions. All teachers applied content instructor and content activator interventions with a prevalence of the more directive *content instructor* interventions.

Teachers applied significantly more teacher-oriented than learner-oriented interventions ( $t(22) = 5.952$ ;  $p = .000$ ; Cohen's  $d = 1.27$ ). No significant differences were found when comparing the mean scores of the programmes for the four categories. Teachers of social-educational programmes did not show more learner-oriented teaching behaviour than teachers of management programmes did.

Observations showed that teachers within the two programmes facilitated PBL in various ways. For example, in half of the sessions teachers took the initiative to start the session, whereas, in the other half of the sessions, in line with the self-directed learning principle, students took the initiative to start the session. This was applicable for both programmes. The number of interventions in the main phase also varied between teachers. Time allocated to the rounding-off phase ranged from 0 to 37 minutes. In the rounding-off phase some teachers gave individual feedback to students, some teachers gave feedback on the group process and other teachers discussed assignments. There were almost

no similarities in teaching behaviours among the teachers observed. In other words, in both programmes individual teachers facilitated the PBL process rather differently.

4.3.3 *Similarity in beliefs and behaviour*

Similarity in beliefs

To test for similarity in beliefs about teaching and learning, Levene’s test for equality of variances was calculated (see Table 4.2). No significant differences were found on any of the four belief categories or on the teacher- or learner orientation between both programmes. This indicates that teachers of social-educational programmes did not show more similar beliefs about teaching and learning than teachers of management programmes did. Teachers of social-educational programmes did not agree more with learner-oriented beliefs and did not hold more similar beliefs than those of management programmes did.

Similarity in behaviour

Levene’s test for equality of variances was conducted to assess the similarity in behaviour (see Table 4.3). Results showed no significant differences on any of the four behaviour categories or any of the two orientations. This indicates that teachers of social-educational programmes do neither demonstrate more learner-oriented nor more similar teaching behaviour than teachers of management programmes do.

4.3.4 *Discrepancy between beliefs and behaviour*

**Table 4.4. Cross Tabulation of the Discrepancy between Beliefs and Behaviour**

Programme	Behaviour	Beliefs				Total
		Content instructor	Process organiser	Content activator	Process observer	
Management	Content instructor	1	0	5	2	8
	Process organiser	0	0	1	3	4
	<b>Total</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>5</b>	<b>12</b>
Social-Educational	Content instructor	0	0	3	1	4
	Process organiser	0	0	4	2	6
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>3</b>	<b>10</b>

Table 4.4 shows the classification of teachers based on their beliefs and their teaching behaviour. Almost all teachers (21 out of 22) could be considered as

learner-oriented regarding their beliefs (content activator and process observer). One management teacher could be considered teacher-oriented: the beliefs of this teacher were categorised as content instructor. All teachers could be identified as teacher-oriented regarding their teaching behaviour (content instructor or process organiser). None of the teachers were, with regard to their behaviour, categorised as content activator or process observer. These results indicate a discrepancy between teacher beliefs and teacher behaviour, with the exception of one (TM) teacher who showed consistency between beliefs and behaviour. No significant association between beliefs and behaviour (Cramer's  $V$ ) or agreement (Cohen's Kappa) between beliefs and behaviour were detected in the management programmes ( $V = .371$ ; Kappa = .029,  $p = .460$ ), nor in the social-educational programmes ( $V = .089$ ;  $p = .778$ ; Kappa = .00).

Based on orientation (content or process oriented) and teaching style (directive or supportive), four teacher profiles could be identified:

1. Teachers who believe in supporting the content but predominantly directed the content. These eight teachers were congruent regarding their orientation; they were content-oriented regarding beliefs and behaviour. They showed incongruence regarding their teaching style. They believe in a supportive teaching style but showed a mainly directive teaching style
2. Teachers who believe in supporting the process but predominantly directed the process. These five teachers were congruent regarding their orientation: they were process-oriented regarding beliefs and behaviour. They showed incongruence regarding their teaching style. They believe in a supportive teaching style but showed a mainly directive teaching style.
3. Teachers who believe in supporting content but were focused on directing the process and teachers who believe in supporting the process but were focused on directing the content. These eight teachers were incongruent regarding orientation and teaching style.
4. And finally, one teacher who believes in directing the content also focused on directing the content. This teacher was congruent regarding orientation and teaching style.

These results indicate a discrepancy between teacher beliefs and teaching behaviour.

The Squared Euclidean Distances between standardised scores on beliefs and behaviour of each observed teacher were calculated and then divided teachers into three groups depending on the distance between beliefs and behaviour. The smallest distance was 0.27 and the largest distance was 3.64. The range between the smallest and the largest distance was 3.37 therefore. Teachers with a distance of between 0.27 and 1.39 were considered teachers with a small gap, teachers with a gap of between 1.40 and 2.52 were considered teachers with an average gap, and teachers with a distance of between 2.53 and 3.64 were considered teachers with a large gap between beliefs and behaviour. Out of 12 management teachers, 5 teachers demonstrated a small, 5 teachers an average, and 2 teachers a large gap between beliefs and behaviour. Out of 10 social-educational teachers, 6 teachers demonstrated a small, 1 teacher an average and 3 teachers a large gap between beliefs and behaviour. In more detail, the smallest gaps between beliefs and behaviour were mainly found between the Content versus Process score, in that 11 teachers showed the smallest gap on content- or process-orientation. No significant association (Cramer's V) and agreement (Cohen's Kappa) between the gaps were detected ( $V = .357$ ,  $p = .247$ ;  $Kappa = .205$ ,  $p = .169$ ).

#### 4.3.5 Collective learning

**Table 4.5. Means and Standard Deviations of Collective Learning and its four Factors.**

	Total n=90		Management n=58		Social-Educational n=32	
	M	SD	M	SD	M	SD
<b>Collective learning</b>	<b>2.62</b>	<b>.42</b>	<b>2.56</b>	<b>.46</b>	<b>2.73</b>	<b>.32</b>
Shared vision	2.59	.54	2.49	.58	2.78	.40
Inquisitive dialogue	2.59	.50	2.51	.54	2.76	.39
Collective action	2.91	.49	2.85	.50	3.00	.48
Evaluation and reflection	2.44	.49	2.43	.54	2.47	.39

Note 1: Cronbach's alpha: Collective Learning = .901; Shared Vision = .843; Inquisitive Dialogue = .720; Collective Action = .777; Evaluation and Reflection = .744.  
 Note 2: All variables were scored on a 4-point Likert scale.

As shown in Table 4.5, the majority of the scores are above the midpoint of the scale, indicating that teachers in all programmes perceive aspects of collective learning. The factor *collective action* was the highest scoring factor, while the *evaluation and reflection* score was the lowest in both programmes. The highest

score was for *collective action* in the social-educational programmes and the lowest scores for *evaluation and reflection* in the management programmes. Teachers of social-educational programmes showed a higher mean score on collective learning and higher mean scores on the four collective learning factors than teachers of management programmes did.

Teachers of social-educational programmes scored significantly higher on collective learning than teachers of management programmes did ( $t(88) = -2.150$ ;  $p = .034$ ; Cohen's  $d = .45$ ). Social-educational programmes scored significantly higher on the factors *shared vision* ( $t(88) = -2.568$ ;  $p = .012$ ) and *inquisitive dialogue* ( $t(88) = -2.355$ ;  $p = .021$ ). The other factors did not significantly differ between the two programmes.

A significant correlation was detected between collective learning and learner-oriented beliefs ( $r = .222$ ;  $p = .035$ ), specifically a significant correlation was detected between collective learning and process observer beliefs ( $r = .281$ ;  $p = .007$ ). In addition, a moderately significant relationship between collective learning and learner-oriented beliefs was found within the social-educational programmes ( $r = .366$ ;  $p = .039$ ).

No significant correlation was detected between collective learning and learner-oriented behaviour ( $r = .103$ ;  $p = .667$ ). Moreover, no significant relationship was found between the two learner-oriented categories content activator behaviour ( $r = .180$ ;  $p = .448$ ) and process observer behaviour ( $r = -.197$ ;  $p = .406$ ). The correlation between collective learning and the gap between beliefs and behaviour turned out to be non-significant ( $r = -.034$ ;  $p = .884$ ).

## 4.4 Conclusions and discussion

This study was designed to explore whether teachers in programmes with a higher level of perceived collective learning show more learner-oriented beliefs and behaviours and whether collective learning is related to the discrepancy between teacher beliefs and behaviour.

### 4.4.1 Discrepancy between beliefs and behaviour

Teachers of both programmes agreed more with learner-oriented beliefs than with teacher-oriented beliefs. Contrary to the preference for learner-oriented beliefs, all teachers in this study applied more teacher-oriented than learner-oriented

interventions. Hence, the teacher profiles demonstrate that teachers tend to apply a directive style in guiding content and process. When teachers use the learner-oriented supportive style they focus on the content rather than on the process. It appears that teachers have difficulties with applying teaching strategies that encourage students to develop self-directed learning and to stimulate collaborative knowledge building. These findings apply to both programmes studied. This study did not confirm that teachers of social-educational programmes agree more strongly with learning-oriented beliefs and show more learner-oriented behaviour than teachers of management programmes.

Taken together and in line with the findings of Postareff (2007) and Windschitl (2002), this study demonstrated a discrepancy between teacher beliefs and teaching behaviour. In agreement with findings of Hung (2011) and Windschitl (2002) teachers seem to have difficulties with applying learner-oriented teaching strategies. An explanation for the inconsistency between beliefs and behaviour might be related to the distinction between central and peripheral beliefs (Haney & McArthur, 2002). Central beliefs determine behaviour. The influence of peripheral beliefs on teaching behaviour is limited. Even teachers who believe in a learner-oriented approach to teaching show teacher-oriented behaviour. It seems that teacher-oriented beliefs are more central than learner-oriented beliefs and that learner-oriented beliefs are more peripheral. Moreover, it remains to be seen whether teachers are fully aware of the inconsistencies between their beliefs and behaviour. Therefore, it is recommended that teachers be encouraged to make their beliefs explicit and to reflect on their teaching behaviour (Bolhuis & Voeten, 2007).

The inconsistency between beliefs and behaviour, and the difficulties with employing learner-oriented teaching strategies might also be a result of external factors that overrule beliefs (Moust, Van Berkel, & Schmidt, 2005). For instance, the way a particular learner-oriented approach to teaching is embedded in the curriculum is one of these external factors (Assen et al., 2016). The university where this study took place has implemented hybrid problem-based learning. This indicates that teacher-oriented methods (e.g. lectures) are offered to support PBL. Therefore, teachers are expected to fulfil learner-oriented, next to teacher-oriented roles. Consequently teachers frequently have to adjust their teaching behaviour. Other external factors that might influence teaching behaviour are students' capabilities and class sizes (Lindblom-Ylänne, Trigwell, Nevgi, & Ashwin, 2006). Students who show no self-directing skills need more guidance from a tutor in small classes. Specifically, universities that adopted

a learner-oriented approach to teaching appear to be more sensitive to external factors than universities with a more conventional approach to teaching (Lindblom-Ylänne et al., 2006).

#### 4.4.2 *Collective learning*

Teachers of both programmes showed the highest mean score on collective action and the lowest on evaluation and reflection. Although high scores on collective action suggest that teachers of both programmes agreed that their actual teaching behaviour does not differ much from that shown by other teachers, findings of the observations actually demonstrate that teachers do not show similar teaching behaviour at all. These results are in agreement with the findings of the study by Lodders (2013), in which she showed that teachers do not “perform their tasks in the same way when they strived for common outcomes” (p. 285). An explanation for this might be that teachers apply interventions in a way that feels the best for them, in which they feel confident and therefore they might fall back on conventional teaching behaviour. The low score on evaluation and reflection suggests that teachers did not emphasise the evaluation of the results of their actions.

As expected, teachers of social-educational programmes perceived a higher level of collective learning, specifically on shared vision and inquisitive dialogue, compared to teachers of management programmes. These results suggest that teachers of social-educational programmes seem to agree on a shared vision of what they would like to create together. Shared vision is the first factor of the collective learning process and is the starting point for adjusting teaching behaviour. Teachers who are engaged in developing a shared vision are more likely to apply this vision in their daily practices (Draaisma, Meijers, & Kuijpers, 2017). In other words, teachers who endorse the educational vision of the programme are more likely to adjust their teaching behaviour to match this vision. According to Lodders (2013), the inquisitive dialogue plays a key role in collective learning and impacts the other three factors. Findings of the present study suggest that teachers of social-educational programmes integrate knowledge, opinions, competencies and creative thoughts about the approach to teaching more than teachers of management programmes do.

The way management- and social-educational programmes organise and stimulate collective learning might influence the perception of collective learning (Bakkenes, Vermunt, & Wubbels, 2010; Thoonen et al., 2011). Programmes that have chosen collective learning as an intervention with the goal to have



a dialogue about the vision or teaching approaches and experiment with various teaching strategies could perceive a higher level of collective learning than programmes that have chosen formally organised meetings with the goal to generate or distribute information. In the present study teachers perceived collective action as the most important factor but lack the opportunity (or need) to reflect upon and evaluate these actions. These findings suggest that team meetings in both programmes might be focused on exchange of information, organisational issues and content knowledge related to their daily teaching activities. This implies that there is rarely a collective learning environment in which joint evaluation and reflection takes place.

A possible explanation for the lack of evaluation and reflection could be the isolated position of teachers. Teachers are used to solving their problems individually and are not used to discussing their actual problems with other teachers (Vangrieken et al., 2015; Vangrieken, Meredith, Packer, & Kyndt, 2017). Moreover, changing the 'mode of thinking' to a more learner-oriented approach to teaching is a long process and takes a lot of energy for teachers. Therefore, teachers should get the opportunity to share ideas and to construct a shared vision. Lodders (2013) and Thoonen et al. (2013) demonstrated that organisational conditions and transformational leadership are important factors to promote collective learning. Transformational leadership, for instance, has been proven to be an important energiser for collective learning (Thoonen et al., 2013).

#### *4.4.3 Collective learning, teacher beliefs and teaching behaviour*

The current study showed a positive relationship between collective learning and learner-oriented beliefs. Specifically, social-educational programmes showed a higher level of collective learning and a positive relationship between collective learning and learner-oriented beliefs. These findings may be explained by the fact that social-educational programmes prepare students for a working environment where social-communication skills are vital and altruism is seen as a crucial interpersonal skill (Winters, 2012). Management programmes, on the contrary, prepare students for a working environment where organisational and decision-making skills are important and result-oriented skills are required (Hensel, 2010). Quinn (1991) showed that a result-oriented business environment attracts employees who are less focused on altruism. To develop a shared vision (Lodders, 2013) and shared mental models, altruism is vital because these things assume reciprocal and complex interdependence (Mathieu, Hefner, Goodwin, Salas, & Cannon-Bowers, 2000; Mathieu, Rapp, Maynard, & Mangos, 2009).

No relationship was found between collective learning and learner-oriented teaching behaviour. Despite the higher level of collective learning, social-educational teachers did not demonstrate significantly more learner-oriented beliefs and behaviour. Moreover, no relationship was found between collective learning and the gaps between beliefs and behaviour. Teachers in both programmes seem to 'struggle' with transforming their learner-oriented beliefs into appropriate learner-oriented behaviour and tend to fall back on more conventional teaching methods like knowledge transmission and lecturing. According to Meirink et al. (2009) collective learning may lead to more congruence between beliefs and behaviour within teacher teams and may lead to more congruence between beliefs and behaviour. However, the analyses did not confirm that the level of collective learning is related to more congruence between teacher beliefs and teaching behaviour. The congruence between teacher beliefs and teaching behaviour did not differ greatly between the social-educational programmes and the management programmes.

A possible explanation might be found in the way collective learning is embedded in the programmes: Is collective learning mainly an informal process or is collective learning formally organised? Who took the initiative, teachers or leaders, and who determined the goals of the collective learning process? Also the content of formal or informal meetings might influence teachers' expectations and perceptions of the collective learning process: Do teachers share their experiences regarding teacher interventions and teaching strategies? Do teachers have a dialogue about learner-oriented or about teacher-oriented guiding strategies? And do teachers observe other teachers and do they receive feedback on their teaching behaviour? To answer these questions more insight is needed into the way collective learning is put into practice. Another explanation could be that a hybrid PBL curriculum requires of teachers teacher-oriented as well as learner-oriented behaviour. It seems to be difficult for teachers to find a balance between teacher-oriented and learner-oriented teaching strategies. An inconsistent curriculum might therefore lead to incongruence between beliefs and behaviour among teachers.

#### *4.4.4 Limitations and recommendations*

A number of possible explanations for the lack of similarity in beliefs and behaviour and the discrepancy between teacher beliefs and behaviour need to be considered. A first explanation could be a response bias triggered by the research methods used. Teachers of a university who adopted a learner-oriented approach to teaching might tend to give 'socially desirable answers' on

a questionnaire (Williams, 2011). In future research, qualitative instruments such as interviews or focus groups are recommended to get more insight into the central beliefs of teachers. Secondly, both programmes in this study are part of the same university that has implemented PBL as one of its distinctive characteristics. This could explain why teachers of this institute hold beliefs about teaching and learning which are in line with the learner-oriented principles. Thirdly, the relatively small number of observed teachers creates a limitation to the statistical power of this study. Therefore, it is important to increase the sample size and include the teachers of more programmes and more universities.

The way teachers were categorised in this study could also partly explain the inconsistency between beliefs and behaviour. In this study a categorical approach was applied, instead of a dimensional approach (Ruscio, Ruscio, & Carney 2011). Teacher beliefs and behaviour were assigned to just one category, while they demonstrated beliefs and behaviour in several categories. Although teachers were categorised in one of the four categories, this does not mean that teachers did not hold any beliefs or demonstrate any behaviour belonging to the other categories. Trigwell and Prosser (2004), for example, used a dimensional approach. They introduced five approaches to teaching that are positioned on a scale from teacher-oriented to learner-oriented. Since most teachers use a combination of teacher-oriented and learner-oriented behaviour, the development and use of multi-dimensional profiles is recommended for future research.

The comparative design used in this study was less powerful than expected, which can be attributed to the comparison made between management and social-educational programmes. These programme areas are both considered 'soft disciplines' (Biglan, 1973). According to Lindblom-Ylänne et al. (2006) and Norton et al. (2005) teachers who teach in the 'hard' disciplines (e.g. physics and mathematics) report more teacher-oriented beliefs and behaviour than teachers who teach 'soft' disciplines (e.g. social work and education). Therefore, it might be interesting to include teachers of various 'hard' disciplines in further research.

It would be helpful to use qualitative instruments to get more insight into teacher profiles, the organisation of collective learning (formal and informal opportunities to share teaching experiences), the content of the formally organised meetings, and the perception of teachers about these meetings. Interviews, observations or a case study could be used to explore the way teachers perceive collective learning, how they collectively develop their beliefs and behaviour

and how they organise collective learning. It is important that the four collective learning factors are included in the collective learning process. Reflection on teaching behaviour together with other teachers using videotaped material, seems to be one of the most effective types of training approaches to change teaching behaviour (Hattie, 2009; Van den Bos & Brouwer, 2014). Video training could be used as a starting point for a dialogue by making teachers more aware of their behaviour. A dialogue can stimulate teachers to make their beliefs and behaviour more explicit. Further research should concentrate on how teachers might be supported in enhancing consistency between their beliefs and behaviour.

## 5. How can dialogue support teachers' professional development? Harmonising multiple teacher I-positions

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## Abstract

The present study uses Dialogical Self Theory to explore the extent to which a dialogue supports teachers' professional identity development. Using a narrative approach that includes interviews, observations of educational activities and collective meetings, insight is gained into teachers' I-positions, meta-positions and promoter positions. The findings suggest that a dialogue, in which teachers talk about boundary experiences and articulate I-positions, stimulates teachers to reflect on their teaching behaviour from a meta-position and enables them to harmonise their multiple I-positions. Moreover, it stimulates teachers to develop their identity as a teacher and to change their teaching behaviour.

## 5.1 Introduction

Over the past decades, many universities have opted for a learner-oriented approach to teaching. A learner-oriented approach emphasises self-directed, contextual, constructive and collaborative learning and is likely to positively influence students' deep approach to learning (Dolmans, De Grave, Wolfhagen, & Van der Vleuten, 2005; Postareff, 2007). Students are expected to become independent learners who develop life-long learning, analytical, and interpersonal skills, which prepare them for the complex and fast changing society (Dochy, Segers, Van den Bossche, & Gijbels, 2003; Schmidt, Van der Molen, Te Winkel, & Wijnen, 2009).

Several studies have shown that the teacher role is of critical importance in a learner-oriented approach to teaching (Hmelo-Silver & Barrows, 2006; Savin-Baden, 2000). Teachers in a learner-oriented approach concentrate on students' knowledge construction and facilitate students to become self-directed learners who are able to construct knowledge in collaboration with other students by scaffolding, monitoring learning processes, modelling questions and applying metacognitive interventions (Hmelo-Silver & Barrows, 2006; Meirink, Meijer, Verloop, & Bergen, 2009; Wang, Li, & Pang, 2016).

Although most teachers agree more with a learner-oriented than a teacher-oriented approach, they predominantly show teacher-oriented behaviour (Assen, Meijers, Otting, & Poell, 2016). It seems that many teachers have difficulties integrating learning-oriented beliefs into their teaching behaviour (Geitz, Joosten-ten Brinke, & Kirschner, 2015; Hung, 2011; Windschitl, 2002). Previous studies have shown that teachers perceive external factors as main barriers for learner-oriented behaviour. For instance, the way the learner-oriented approach is integrated in the curriculum, students' capabilities and lack of training opportunities for teachers are external barriers that influence teaching behaviour more than beliefs about teaching (Assen et al., 2016; Ertmer, 2005; Moust, Van Berkel, & Schmidt, 2005). Abovementioned studies indicate that a transition from teacher-oriented to learner-oriented teaching behaviour is a far from easy process.

As teacher professional identity (TPI) is the most important indicator of teaching behaviour, it is crucial to stimulate teachers' identity development to realise a transition to a learner-oriented approach (Akkerman & Meijer, 2011; Beijaard, Meijer, & Verloop, 2004). TPI can be defined as a "resource that people use

to explain, justify and make sense of themselves in relation to others, and to the world at large” (MacLure, 1993, p.311) and can be considered a basis for answering teachers’ questions such as “how to be”, “how to act” and “how to understand teaching experiences” (Sachs, 2005, p.15). The development of a TPI is influenced by personal characteristics on the one hand and the educational context on the other hand (Kunnen & Metz, 2015; Meeus, Van de Schoot, Keijsers, Schwartz, & Branje, 2010). It is a continuous process that takes place between assimilation (adapting reality to the self-concept) and accommodation (adapting the self-concept to reality). “Too much assimilation results in rigidity and distortion of reality, while too much accommodation results in chaotic and superficial commitments” (Bosma & Kunnen, 2001, p.15).

TPI has three characteristics: multiplicity, discontinuity and sociality. The first characteristic, multiplicity, refers to multiple sub-identities of a teacher’s identity (Akkerman & Meijer, 2011; Beijaard et al., 2004). Previous studies have emphasised that it is important that sub-identities are in harmony and do not conflict with each other (Arvaja, 2016; Geijsel & Meijers, 2005; Van Veen, Slegers, & Van de Ven, 2005). Teachers with balanced sub-identities are conscious about when and how to employ certain identities and are more likely to adjust to educational changes or innovations than teachers with unbalanced sub-identities (Beijaard et al., 2004). The second characteristic, discontinuity, signifies that TPI is not fixed and often changes (Beijaard et al., 2004). Teachers are able to shift among various sub-identities in response to their teaching environment (Akkerman, Admiraal, & Simons, 2012; Arvaja, 2016). The third characteristic is sociality. Sociality refers to external conditions such as educational policies, educational programmes and colleagues. These external conditions may have an impact on TPI and teaching behaviour (Vangrieken, Dochy, Raes, & Kyndt, 2015).

To align teaching behaviour with a learner-oriented approach teachers have to be able to shift among different sub-identities in order to bring, eventually, their different sub-identities in harmony (Hoekstra, Brekelmans, Beijaard, & Korthagen, 2009; Lomos, Hofman, & Bosker, 2011). A harmonised identity expresses itself in (i.e., takes the shape of) a story told by the teacher, expressing his/her life themes (Savickas, 2011) and the way s/he identifies her/himself based on these life themes with his/her occupation (Ashforth, Harrison, & Corley, 2008). There is evidence that dialogue is a prerequisite for this (Thoonen, Slegers, Peetsma, & Geijsel, 2011; Vescio, Ross, & Adams, 2008). Therefore, this study focuses on the role of dialogue in the development of a TPI as a teacher moves towards a learner-oriented approach.



## 5.2 Theoretical background

### 5.2.1 *Narratives*

A TPI is the result of participating in social and societal structures by which (new) identifications develop (Ashforth et al., 2008; Postareff, Lindblom-Ylänne, & Nevgi, 2007; Trigwell & Prosser, 2004). There is general agreement that these new identifications are built up by means of narratives (Beauchamp & Thomas, 2009; Geijssel, Meijers, & Wardekker, 2007; Pillen, Beijaard, & Den Brok, 2013), that result from an intrapersonal and interpersonal dialogue about meaningful experiences (Connelly & Clandinin, 1999; LaPointe, 2010; Meijers, & Lengelle, 2012; Sfard & Prusak, 2005). Identities are ‘shaped’ via the construction of narratives (Arvaja, 2016; Polkinghorne, 1988) because individuals make meaning by explaining their experiences to others – and with that to themselves (Bruner, 1990; Connelly & Clandinin, 1999).

### 5.2.2 *Collective learning*

Recently the significance of dialogue in relation to TPI has been researched as a social and experiential process of collective learning (Lodders, 2013; Lodders & Meijers, 2017; Meirink et al., 2009; Vangrieken et al., 2015; Vangrieken, Meredith, Packer, & Kyndt, 2017). Lodders (2013) identified four factors of collective learning: (1) shared vision, (2) dialogue and inquiry, (3) collective action, and (4) evaluation and reflection. The collective learning process starts with developing a shared vision about what teachers would like to create together. According to Lodders (2013) dialogue and inquiry play a vital role in exploring ideas and lead to a shared understanding of the vision on which collective actions are based. The last phase of the collective learning cycle is evaluation and reflection on learning processes and their outcomes. These four factors lead to deep-level learning, support teachers in becoming aware of their underlying beliefs about teaching and learning and in making sense of their teaching experiences (Meirink et al., 2009; Vangrieken et al., 2017). In the present study, dialogue is defined as a collective learning process (including the four factors) in which two or more professionals have a planned discussion about their teaching experiences. These experiences are seen as a starting point for the dialogue.

Previous studies have shown that collective learning processes in higher education mostly function on a superficial level (Lodders & Meijers, 2017; Meirink et al., 2009; Vangrieken et al., 2015; Vangrieken et al., 2017). Instead of having a dialogue about experiences regarding teaching approaches and teaching experiences, teachers mostly exchange ‘organisational’ information. The main

reason for this seems to be the traditional school culture, in which a preference for individual autonomy dominates and – consequently – a lack of critical reflection regarding teaching practices exists (Meijers & Hermans, 2018; Vangrieken et al., 2015). There is some evidence that the poor quality of collective learning processes is caused also by the fact that individual teachers do not have a dialogue about teaching experiences with themselves (the so-called internal dialogue) (Schellhammer, 2017; Lengelle, Jardine, & Bonnar, 2017). This is in line with a core assumption of Dialogical Self Theory (DST) stating that the quality of the internal and external dialogues is interdependent, mainly because individuals need a dialogue with others to become aware of their often-unconscious sub-identities (Hermans & Gieser, 2012; Hermans & Hermans-Konopka, 2010). When they are given the opportunity to talk about past and present experiences that feel important, they can gradually discover which sub-identities are relevant in a specific context and how these sub-identities are connected in ‘life themes’ (Lengelle, 2016; Savickas, 2011).

### 5.2.3 *Dialogical Self Theory (DST)*

In the current study, Dialogical Self Theory (DST) will be used to analyse teachers’ narratives. DST sees the self as a dynamic multiplicity of I-positions in the society of mind, with the possibility of dialogical relationships between these positions. I-positions are internalised voices, which articulate not only internal but also external positions (i.e., voices of significant others) (Akkerman & Meijer, 2011; Meijers & Hermans, 2018). An internal I-position is a positioning towards the outside and is linguistically formulated as: ‘I as...’ A teacher, for example, can activate a position of ‘I as coach’ or in another situation activate the position ‘I as instructor’ or ‘I as expert’. An external I-position is an imagined other that is part of the self (Lengelle, 2016). It is linguistically formulated with a possessive pronoun. The possessive formulations ‘my’ or ‘mine’ express these internalised voices of others. For example, elements of identity are if a teacher experiences students as ‘*his* students’ and the subject matter as ‘*my* discipline’. Teachers express their beliefs and values from these multiple internal and external I-positions. Most teachers prefer one of the I-positions and often one of the I-positions is dominant (Arvaja, 2016; Branco, Branco, & Madureira., 2008).

This multiplicity of positions can be in conflict with itself, criticise itself, agree and consult with itself. The articulation of a TPI begins by articulating what is important (express an I-position) and continues when other I-positions come forward to deepen and broaden the initial I-position, resulting in expanded I-positions followed by a meta-position. A meta position (1) “permits some

distance from the other positions”, (2) “provides an overarching view so that several positions can be seen simultaneously and their mutual relationships visible”, (3) “makes it possible to see the linkages between positions as part of one’s personal history or the collective history of the group or culture to which one belongs” and (4) “facilitates the creation of a dialogical space (in contact with others or oneself) in which positions and counter-positions engage in dialogical relationships” (Hermans & Hermans-Konopka, 2010, p.147). The final step is the formation of a promoter position. This position most closely resembles the role of a play’s director who guides, oversees, connects, and can act as an innovator to the characters on stage and can be seen as “the one who is able to take action” (Valsiner, 2014). A promoter position implies openness towards the future and the ability to harmonise the positions that appear and that were identified by the meta-position. The promoter position can “reorganise the self towards a higher level of development” and provides room for both continuity and discontinuity in the self (Hermans & Hermans-Konopka, 2010, p.228).

DST stipulates that TPI starts with a boundary experience, that is, a situation in which a teacher feels tension between I-positions, with which (s)he cannot cope (Ligorio & Tateo, 2007). This feels uncomfortable, and often causes pain or suffering (Meijers & Wardekker, 2002) and provokes a sense of feeling Victimised or Entitled, imaginings of needing Rescue, or resorting to Blame (VERB) to avoid leaving their comfort zone (Baker & Stauth, 2003; Meijers & Lengelle, 2016). Because most teachers start with a dominant I-position (Arvaja, 2016; Branco et al., 2008), to overcome the boundary experience teachers have to start a process of de-positioning followed by re-positioning, or – as Lengelle (2016) puts it – they have to go from a ‘first story’ in which they express their (boundary) experiences from the perspective of their dominant I-position (i.e., old way of coping), to a ‘second story’ in which teachers are able to voice more I-positions and interpret, integrate and shift these positions as part of their professional identity (Vandamme, 2014).

In the ‘first story’ teachers explain the boundary experience from a dominant I-position. In dialogue, however, the reactions of the other invite them to expand this I-position, which means that they are going to use various I-positions to reflect on the boundary experience (Winters, Meijers, Lengelle, & Baert, 2012). The dialogue between various I-positions enables them to develop a meta-position that allows them to observe their own I-positions from a distance and to recognise new linkages between I-positions (Vandamme, 2014; Winters et al. 2012). This leads to a ‘second story’ in which teachers give meaning to

(boundary) experiences. The understanding gained through a meta-position is intended to lead to action. The ‘position’ that is capable of such action and organising other positions is the promoter position (Valsiner, 2004). In the ‘second story’ first conflicting I-positions become more or less harmonised (Beijaard et al., 2004). Teachers show acceptance and based on new integrations of I-positions they make a shift in their perspectives and, as a result, are able to change their behaviour (Meijers & Lengelle, 2012).

The main purpose of this study is to explore whether a dialogue about boundary experiences helps teachers to move from a first to a second story regarding their teaching approach. In addition, the emergence of possible promoter positions will be investigated by observing their teaching behaviour before and after the dialogue.

## 5.3 Method

### 5.3.1 Context

The present study took place at an International Hospitality Management programme (IHM) of a University of Applied Sciences in the Netherlands. Twenty-five years ago the university adopted a hybrid Problem-Based Learning (PBL) approach as the core of their educational vision. PBL is a learner-oriented approach to teaching based on four learning principles: self-directed, contextual, constructive and collaborative learning (Dolmans et al., 2005). Next to PBL, workshops and lectures are offered to students to explain key concepts of the interdisciplinary module content, making for a hybrid PBL approach.

In PBL, small groups of students solve real-world problems under the guidance of a tutor. Students meet twice a week and use a seven-step procedure to solve problems (Moust, Bouhuijs, & Schmidt, 2007). In each session, a student is the chairperson. The tutor acts as a facilitator by applying learner-oriented interventions to monitor students’ self-directed and collaborative learning process and to activate knowledge construction. In a tutor manual, learning objectives, analytical techniques and background information related to the problem scenario are described. Previous research had shown that teachers at this university ‘struggle’ with applying learner-oriented interventions (Assen et al., 2016; De Boer & Otting, 2013).

### 5.3.2 Participants

Four teachers who were tutor in a second year IHM module participated in this study. Table 5.1 shows an overview of the characteristics of the four teachers.

**Table 5.1. Teacher Characteristics**

<b>Tutor</b>	<b>Gender</b>	<b>Age</b>	<b>Tutor experience in years</b>	<b>Experience in hospitality industry</b>
Emma	F	51 - 60	8	Yes
Ben	M	21 - 30	4	No
Rachel	F	41 - 50	2	Yes
Nancy	F	41 - 50	6	Yes

### 5.3.3 Research design and data collection

The purpose of the research was to gain insight into the I-positions, meta-positions and promoter positions of teachers as part of their professional identity development. A narrative research design was used to explore to what extent the dialogue supports teachers' professional identity development (Creswell, 2014). Data for this study were collected using mixed methods: two PBL sessions of each teacher were observed and teachers were invited to share their personal experiences and stories during six collective meetings and two individual interviews. Table 5.2 shows the sequence of the data collection methods.

**Table 5.2. Sequence of the Data Collection Methods**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
Observing PBL session 1	Interview 1	Collective meetings	Observing PBL session 2	Interview 2	Check retold stories

### Observations of PBL sessions

Two PBL sessions per teacher were used to examine teacher interventions: one PBL session (PBL1) was observed before and one PBL session (PBL2) after the collective meetings. PBL sessions were divided into a starting phase (announcements), main phase (seven-step procedure) and evaluation phase (feedback). Teaching behaviour was determined by ascertaining the number and nature of teacher interventions during the main phase. PBL sessions were videotaped and transcribed.

## Observations of collective meetings

Six collective meetings of ninety minutes each were organised with four teachers to encourage a dialogue. The objective of the meetings was to share ideas and perspectives about teaching, to reflect and give feedback on videotaped teaching practices and to encourage teachers to experiment with learner-oriented interventions during PBL sessions. These meetings could be considered ‘member-oriented professional communities with a pre-set agenda’ (Vangrieken et al., 2017). The goals were discussed at the beginning of each meeting and participants had the opportunity to add issues to the agenda.

During the first introductory meeting the expectations of the researchers and the importance of engagement by everyone concerned were explained. The goal of the second meeting was to develop a *shared vision* about the learner-oriented approach to teaching. *Dialogue and inquiry* was the goal of the third and fourth meeting. Previous research has shown that videotaped material is one of the most effective tools for stimulating teachers to reflect on and change their teaching behaviour (Hattie, 2009; Van den Bos & Brouwer, 2014). Therefore, per teacher four characteristic video-recorded episodes of PBL1 were shown. Firstly, teachers were asked to reflect on their own interventions and were asked to answer the questions: “What was your intention regarding the intervention?”, “How did students react?” and “How do you feel about this intervention?” Secondly, other teachers were asked to give feedback on and have a dialogue about other possible (learner-oriented) interventions. After that, the facilitator gave feedback and explained how the interventions had been coded. Teachers were challenged to experiment with learner-oriented interventions during PBL (*collective action*). The last two meetings focused on *evaluation and reflection*. Teachers were asked to reflect on their experiences using learner-oriented interventions and to evaluate the collective learning process. The meetings were audio-recorded and transcribed.

## Interviews

The first interview took place after PBL1. The aim of the first interview was to start a dialogue about teacher interventions in PBL. Examples of questions were: “How do you perceive PBL as a tutor?”, “How would you describe your own tutor style?” and “Which factors influence your interventions?” At the end of the interview teachers received feedback on the number and nature of the interventions in PBL1. The second interview took place after the collective meetings and PBL2 and aimed to establish to what extent the collective meetings supported teachers’ identity development. Example questions were: “How

did you experience the collective learning process?” and “How did the dialogue in the collective meetings and the feedback influence your teacher interventions?” Two researchers were involved in the interviews. The duration of the interviews was approximately one hour. All interviews were audio-recorded and transcribed.

5.3.4 Data analysis

Observations of PBL sessions

To analyse teaching behaviour, the number and nature of teacher interventions during the main phase of the PBL sessions were determined. A teacher intervention was defined as a verbal intervention during the main phase of a PBL session. These interventions could include several sentences. Individual words (okay, yes, no) were not included.

Two researchers independently coded the interventions and then discussed their coding results. Two steps were used to explore the nature of the interventions. The first step was to determine whether the intervention was related to knowledge construction (content) or to the learning process. The second step was to determine which tutor style was used, a learner-oriented supportive tutor style or a teacher-oriented directive tutor style. Based on these two steps the interventions were divided in two directive teacher-oriented categories (content instructor and process organiser) and two supportive learner-oriented categories (content activator and process observer). Table 5.3 provides a detailed description of the four categories.

Table 5.3. Observation Categories: Teacher Interventions

Intervention: Process/ Content	Teaching style: Directive/ Supportive	Category	Teaching Activities
Content	Directive	Teacher-oriented <i>Content Instructor</i>	Transmitting, teaching, informing, explaining, instructing, defining, checking, answering
	Supportive	Learner-oriented <i>Content Activator</i>	Challenging, questioning, activating, motivating, encouraging, exploring, connecting, elaborating
Process	Directive	Teacher-oriented <i>Process Organiser</i>	Directing, structuring, leading, chairing, focusing, inciting, addressing, reassuring
	Supportive	Learner-oriented <i>Process Observer</i>	Observing, evaluating, diagnosing, monitoring, scaffolding, modelling, reflecting

Collective learning and interviews

Transcriptions of interviews and collective meetings were used to collect teacher’s individual narratives. Researchers used the transcriptions “to retell the story of teachers in their own words” (Creswell, 2014, p.537). The stories were first analysed to identify the DST concepts, after which they were arranged into a ‘first story’ and a ‘second story’ per teacher. As can be seen from Table 5.4, in the ‘first story’, I-positions were related to boundary experiences, external barriers, and expanded positions, while in the ‘second story’ meta-positions and promoter positions were described (Lengelle, 2016).

Table 5.4. Sequence of the DST Key Concepts

First Story			Second Story		
I-position	Boundary experience	Extrinsic/intrinsic barriers	Expanded position	Meta-position	Promoter position
Explaining what is important for him/herself. Incorporating internal positions and external positions.	Articulating conflicts between I-positions. This feels uncomfortable, and often causes pain or suffering.	Expressing limitations in the contextual environment of teachers and limitations in skills, which influence teaching behaviour.	Reflecting on the I-positions by voicing other possible perspectives.	Observing oneself from a distance and seeing linkages between positions as part of one’s own story.	Exploring and applying other/new behaviour.

Teachers’ personal stories from observations, interviews and collective meetings were used to retell teachers’ experience in their own words using key concepts of DST. Based on the chronology of the DST key concepts a retold story of the individual experiences per teacher was presented in a storyline (Creswell, 2014; Kayi-Aydar, 2015). Teachers were involved in confirming the validity and credibility of the retold stories. Teachers were asked if they could recognise themselves in their retold stories and could make suggestions for modifying their story, which resulted in minor adjustments in the wording of some phrases (e.g. ‘most students’ instead of ‘students’, or ‘I struggle with’ instead of ‘I lack the skills’).

5.3.5 Procedure

Three researchers, all experienced PBL tutors from the same university, were involved in collecting and analysing data. During the collective learning meetings



one of the researchers was the facilitator of the meetings and another researcher took the role of observer. To ensure the accuracy of the data, researchers analysed data first individually and then discussed their respective findings.

Teachers and students were informed about the purpose of this study, cooperated voluntarily and received no financial compensation. IHM management granted permission for this study. All participants, including the students in the observed PBL sessions, gave written consent for the use of data for this study.

## 5.4 Results

### 5.4.1 Observations of PBL sessions

As can be seen from Table 5.5, the number of interventions of all four teachers decreased in PBL2. Three teachers (Emma, Ben and Nancy) applied nearly half the number of interventions compared to PBL1. Moreover, these teachers decreased their teacher-oriented interventions while increasing their learner-oriented interventions. One teacher (Rachel) increased the number of teacher-oriented interventions and decreased the learner-oriented interventions.

**Table 5.5. Interventions per Category per Teacher**

Tutor	Teacher-oriented						Learner-oriented			
	Number of Interventions		Content Instructor		Process Organiser		Content Activator		Process Observer	
	PBL1	PBL2	PBL1	PBL2	PBL1	PBL2	PBL1	PBL2	PBL1	PBL2
Emma	130	68	44 (34%)	28 (41%)	71 (55%)	20 (29%)	13 (10%)	17 (25%)	2 (1%)	3 (5%)
Ben	100	51	27 (27%)	10 (20%)	59 (59%)	22 (43%)	8 (8%)	13 (25%)	6 (6%)	6 (12%)
Rachel	20	17	8 (40%)	8 (47%)	5 (25%)	6 (35%)	7 (35%)	3 (18%)	-	-
Nancy	17	8	2 (12%)	5 (63%)	11 (65%)	1 (12%)	4 (23%)	-	-	2 (25%)

### 5.4.2 Observations of collective meetings

During the introductory meeting and the ensuing meeting that was focused on shared vision, teachers expressed feelings of Victimisation and Entitlement. An example of Victimisation: “I need to give constructive feedback, however I never got the opportunity to learn and experiment with giving feedback” (Rachel). An

example of Entitlement: “Even after we developed cases with help of the industry, which were therefore very relevant for the industry, students’ motivation really disappointed me” (Nancy). Teachers also expressed feelings of Rescue by for instance wishing to receive back up from the management: “To prohibit access to educational activities for students who disturb the group learning process is not allowed” (Nancy). In addition, teachers tended to Blame other teachers, management or the curriculum to justify their teacher-oriented interventions. The following statement is an example of the latter: “A lot of teachers do not follow the seven-step procedure and therefore students are not able to use various analytical methods, so I need to explain that to students” (Emma).

In the third and fourth meeting (dialogue and inquiry) teachers were confronted with their teaching behaviour. In most cases teachers found it difficult to explain why they intervened in a certain way, however during the dialogue with others they became conscious about their behaviour and articulated their dominant I-positions and boundary experiences.

During the last two meetings teachers reflected on their experiments with learner-oriented interventions. Findings reveal that the four teachers did not agree on collective action, rather they experimented individually. Teachers also reflected on the collective learning process. All four teachers expressed that the collective learning meetings stimulated them to reflect on their beliefs and teaching behaviour. They mentioned specifically that they should take the time to have a dialogue with each other. They also expressed that they would like to change the content of their regular teacher meetings, which are more about exchanging information than about reflecting on vision, beliefs and teaching behaviour.

### *5.4.3 Case studies*

Retold stories of each teacher have been divided below into a ‘first story’ and a ‘second story’, based on the observation of the first PBL session (PBL1) and the first interview (Int1), the dialogue in the collective meetings (CM), observations of the second PBL session (PBL2) and the second interview (Int2).

#### *Emma*

Emma has eight years of experience as a PBL tutor and she has work experience in the hospitality industry. She describes herself as an expressive, impatient woman with a strong personality. Emma indicated that she is result-oriented and is focused on knowledge of the hospitality industry. Compared to the other three tutors she applied the highest number of interventions in PBL1. Most

interventions were teacher-oriented, indicating that Emma predominantly used a directive tutor style.

### First story

Emma positioned herself as a demanding tutor. Compared to other tutors *“I demand a lot from students”* (Int1). She was convinced that her interventions were needed to push students in the right direction. She repeatedly stressed the importance of interventions because interventions actively involve students in the PBL process and prevent students from feeling lost: *“If I do not direct and push, students do not learn anything and do not take responsibility for their own learning process”* (Int1). Emma discovered that students perceive her as very strict and demanding, she even heard that students describe her as *“one of the most demanding tutors of the module”* (Int1). Emma perceived this as positive feedback because students expressed, during the evaluation of PBL, that they appreciate demanding tutors who are not afraid to discuss students’ behaviour. Students do not appreciate tutors who hardly intervene: *“Some tutors are present but do not intervene at all”* (Int1) and therefore, according to Emma, students do not learn enough. She expressed the teacher-oriented I-position ‘I as demanding tutor’. Emma also expressed *“My students expect a demanding and intervening tutor”* (Int1). This could be recognised as an external I-position. Her assumption was that students do not have sufficient skills to direct their own learning process. As an example she mentioned that in previous modules, students did not develop various analytical methods, therefore, teacher-oriented interventions are needed to explain students how to analyse problems and to encourage students to use various analytical techniques. Emma perceives this as an extrinsic barrier to applying learner-oriented interventions.

Emma’s experience in the hospitality industry strengthens her beliefs that she needs to add real-world knowledge. She expressed her dominant teacher-oriented I-position ‘I as hospitality expert’. She would like to share more of her hospitality experience with students to enable them to link theory to practice. According to Emma, students appreciate tutors who are able to share their hospitality experiences. This can be seen as an external I-position ‘I need to provide my students with my hospitality knowledge’. Emma is convinced that these explanations are necessary to activate students’ curiosity in the hospitality industry and to avoid disappointing learning outcomes. In general, students gave Emma the feeling that they are not eager to learn about the developments and trends in the hospitality industry, because students mainly study for the end of the module test.

## Second story

The video-recorded episodes of the observed PBL session shown during the collective meetings caused a 'wake-up call'. Emma became aware that she applied more interventions than the other tutors. She realised that she showed impatient behaviour and frequently took over the chairperson role. Although Emma indicated that teacher-oriented interventions are needed, she realised that she tended to take over the responsibility from students and thereby hindering students from taking responsibility for the learning process. She was able to observe herself from a meta-position. This was illustrated in the following reflection: *"I ask myself frequently who is responsible for the process, students or only the tutor, I try to wait before taking initiatives and try to involve students in the evaluation of their own learning process"* (CM). She also became aware that she should support students in activating their prior knowledge and should encourage students to explore their own practical experiences. It was clear that she felt a boundary experience between providing knowledge to ensure that students attain the learning outcomes and encouraging students to construct knowledge.

After the collective meetings, Emma reduced the number of interventions, applied less process organiser interventions and applied more content activator interventions (PBL2). It seems that she had learnt to give students responsibility for their learning process but still felt responsible to direct the knowledge construction process (content instructor interventions).

## Conclusion

In the first story Emma's I-positions strengthen teacher-oriented interventions emphasising that students need external direction to become active. Moreover, she mentioned barriers that 'forced' her to use teacher-oriented interventions. Emma hardly expressed any boundary experiences in the first story. She was convinced that her way of intervening was the best way to support students. In the second story, Emma had become aware that her interventions actually led to inactive students. This was a boundary experience. She asked herself questions on how to change her behaviour and was able to take the first steps in making a shift in her tutor style from teacher-oriented to learner-oriented. She started to develop an expanded position. It seems that, because of her strong teacher-oriented positions, linkages between the various I-positions were not established.

## Ben

Ben has four years of experience as a PBL tutor. Contrary to the other three teachers, Ben has no hospitality background. In PBL1 Ben applied the second highest number of interventions of all teachers. Most interventions were teacher-oriented process organiser and content instructor interventions. This demonstrated that Ben used predominantly a directive tutor style.

### First story

Ben positions himself as an experimenter: *“I like to experiment with different facilitation strategies and I like creativity in PBL”* (Int1). Ben is specifically interested in digital learning and would like to try out different learner-oriented strategies to support students’ learning process, but feels a lack of support and freedom to do so. He feels tension between PBL procedures and his preference for experimenting. Ben mentioned the tutor manual (including the seven-step procedure of PBL) as one of the external factors that influenced his teaching behaviour. He explained that he perceived the manual as too prescriptive and as a barrier for his own and students’ creative process. Observations of PBL1 showed that Ben repeatedly took the process organiser position to structure and direct the session according to the procedures mentioned in the PBL manual. It seemed that Ben found it difficult to cope with the learner-oriented I-position of ‘I as experimenter’ and the teacher-oriented I-position of ‘I as process organiser’.

Another important position for Ben was that he regarded himself as a member of the PBL group instead of being the ‘teacher’ of the group. Students and tutor are both responsible for the collaborative learning process. *“I do not like to be an authoritarian teacher”* (Int1), he said. He noticed, however, that students do not take the responsibility for their own learning process. Besides, they expect a certain hierarchy between themselves and tutors, for instance, students expect tutors to address other students when there are issues among students. This indicates that Ben recognised the conflicts between two I-positions, ‘I as member of the PBL group’ and ‘I as authoritarian teacher’. Also an external position was recognised in the first story: *“My students expect hierarchy between tutor and students”* (Int1).

Ben repeatedly indicated that although he would like to act as an activator of knowledge construction, he mostly acted as a knowledge instructor. This causes a conflict between I-positions of ‘I as content activator’ and ‘I as knowledge instructor’. Ben explained that the end of the module tests, capabilities of students and a lack of passion and curiosity amongst students urged him

to apply teacher-oriented interventions. Specifically, the way of assessment is an external factor that bothers him. He feels responsible for the students' test results: *"My pitfall is that I provide students with information to ensure that they cover the content needed for the test"* (Int1). In addition, Ben expressed an external I-position, *"My students are only interested in what they need to know for the test"* (Int1). These tests are, according to Ben, barriers for students' curiosity and creativity.

## Second story

During the collective meetings Ben was confronted with the discrepancies between his preferred positions. He became aware that he structured sessions as a result of *"his own associative and chaotic mind"* (Int2). He recognised that the pressure of the PBL procedures was partly caused by *"self-pressure"* based on his own beliefs. He realised that his teaching behaviour did not encourage students to take responsibility for their own learning process. An eye opener was that when students were focused too much on the tutor they become inactive. He became aware that: *"Students should be central actors of PBL and not the tutor"* (CM). In PBL2, Ben started to experiment with various facilitation strategies and to disregard the seven-step procedure of PBL. Ben became aware that he did not need to intervene immediately when silences occur, but to be patient and allow students to take initiative. He would like to practice this behaviour but: *"It is easy to say, difficult to practice"* (CM). To avoid the hierarchical position, Ben changed his seating position in the PBL group: *"I spent years at the head of the table, now I sit amongst the students. As a consequence, students are more focused on the chairperson who is seated at the head of the table. This is the best advice I received during the collective meetings"* (CM).

During the collective meetings, Ben discovered that a reason for taking the position of knowledge instructor was his own lack of facilitation skills specifically in formulating open questions and giving feedback: *"I am aware that using open questions encourages students to explore concepts and to construct knowledge and stimulates deep learning. However, I have never learnt how to ask open questions and I struggle giving feedback on the learning process"* (CM). Ben became aware that asking open questions and acting as a role model had a positive effect on students. He brought the positions together from a meta-position: 'I as content instructor' (who would like to ensure that students are prepared for the knowledge test) and 'I as content activator' (who can support students in understanding the knowledge by asking open questions, which support them to prepare for the test).

PBL2 showed that Ben adjusted his teaching behaviour after the collective meetings. Compared to PBL1, Ben not only diminished the number of interventions in PBL2 but also changed the nature of his interventions. Ben decreased the number of teacher-oriented interventions and increased his learner-oriented interventions, specifically content activator interventions. He was able to ask more open questions.

## Conclusion

The first story shows that Ben goes a long way to meet students' expectations by applying teacher-oriented interventions. He wants to ensure that students are able to pass the end of the module test and that PBL is structured according to the prescribed rules. This causes boundary experiences. The second story shows that Ben was able to observe his own tutor behaviour from a meta-position and to link I-positions. He recognised that he 'used' external barriers to avoid changes in tutor behaviour and became aware that *he* is the key to changing his teaching behaviour. Ben demonstrated that he was open-minded, eager to learn and willing to experiment with new teaching strategies. In PBL2 he was able to show changed teaching behaviour based on these insights (promoter position).

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## Rachel

Although Rachel has two years of teaching experience, she sees herself as a beginning teacher. Before she became a tutor she worked in the hospitality industry. Rachel describes herself as an observer who normally gives her opinion after others have given theirs. In PBL1 Rachel applied a low number of interventions. Most interventions were related to knowledge construction, almost equally divided between content instructor and content activator interventions. Rachel applied no process observer interventions, indicating that she used a directive tutor style in guiding the process.

## First story

In line with her character, Rachel preferred the observer tutor role above an instructor role: *"My task is not providing knowledge, I do not give lectures during PBL"* (Int1). Rachel positioned herself as 'I as observer'. In general Rachel communicated positively about students' motivation, behaviour and enthusiasm. Contrary to the other three teachers Rachel emphasised that participation, motivation and active behaviour are responsibilities of students. Due to her trust in students, Rachel finds it easy to stimulate students to take the responsibility for their own learning process. She gives students time to solve their own issues

and waits before intervening. She is convinced that students learn from mistakes and, therefore, students should be allowed to make their own mistakes. Rachel was surprised that other tutors struggle with lack of time in PBL: *"I do not feel any time pressure. Lack of time is not the tutor's responsibility but the students' responsibility"* (Int1). However, Rachel tends to avoid giving feedback to students and she spends little time on the evaluation of the PBL session. This was illustrated in her statement: *"I struggle with skills to approach students' behaviour using a helicopter view, therefore, I tend to avoid feedback. In addition, I have the feeling that I have to choose between guiding content or process, focusing on both is difficult"* (Int1). Although Rachel indicated that being an observer of the process is one of the most important tasks of a tutor, she still struggles giving constructive feedback to students.

Rachel positioned herself as 'I as facilitator of the collaborative learning process'. When talking about PBL sessions she referred constantly to 'we' (tutor and students) instead of 'they' (students). She stressed the importance of being a part of the PBL group, positioning herself as 'as member of the group' and highlighted the collaborative learning process between tutor and students. She repeatedly pointed out that she facilitates the learning process and that students should take the lead. She emphasised the importance of students' responsibility for their own learning process and indicated the external I-position: *"My students are able to take their own responsibility"* (Int1).

Although Rachel was positive about the input of students, she noticed that in some PBL-groups, students have difficulties motivating each other and students find it difficult addressing fellow students who show unmotivated behaviour. Students expect the tutor to take action. However, Rachel also feels uncomfortable to confront students about their uncooperative behaviour: *"Students are not always willing and capable of addressing collaboration issues in the PBL sessions and expect the tutor to intervene when these issues arise"* (Int1). This provoked inner conflicts between being a part of the group and being the teacher.

## Second story

Rachel was surprised about the feedback she received from the other tutors during the collective meetings. The other tutors were impressed by the way she facilitated the PBL session. Specifically, her calm tutor behaviour, her confidence in students' capabilities and allowing silences were valued. Rachel was enthusiastic that her video-recorded episodes were used as examples of best practices. However, after discussing the video-episodes of all teachers, Rachel



started to have doubts about the low number of interventions she applied. She asked herself whether she should intervene more to activate students' knowledge construction. She predominantly intervenes when students focus on the wrong subject: *"I intervene only when students discuss unrelated subjects"*. She asked herself *"Do I have to direct students, because sometimes they get lost in a lot of details, do I have to intervene and explain the bigger picture of the problem?"* (CM).

In addition, Rachel became aware that in most PBL groups the reporting of findings focused on sharing information instead of constructing knowledge. She would like to activate students to have higher-level discussions: *"I am afraid that I do not stimulate deep learning and that students' learning is superficial"* (Int2). To stimulate knowledge construction, Rachel started an experiment with her PBL group sharing online information through "Blackboard" in between two PBL sessions. The idea was that students read this information before the PBL session and construct knowledge during the PBL session. Although both she and the students were satisfied with this approach, students decided not to continue this experiment. Rachel was disappointed and observed from a meta-position that it is difficult to encourage students to use other analysing and reporting techniques when the implication is that students need to take more time to prepare the PBL sessions: *"It is challenging to motivate students for taking the responsibility to make the PBL sessions more valuable and interesting"* (CM).

The change in the number and nature of interventions in PBL2 was small, probably caused by the general endorsement of her way of intervening. The dialogue containing feedback of other tutors might have caused a small increase in teacher-oriented interventions. Rachel specifically increased the process organiser interventions.

## Conclusion

In the first story Rachel mentioned hardly any external barriers that influence her tutor behaviour. In the second story Rachel showed that she was able to reflect on her tutor behaviour and that she was willing to experiment with new techniques (promoter position). Due to her strong learner-oriented I-positions and the appreciation of the other tutors regarding her tutor skills, it is not surprising that Rachel showed merely small changes in her tutor behaviour.

## Nancy

Nancy has six years of experience as a PBL tutor and has work experience in the international hospitality industry. PBL1 showed that, compared to other tutors, she applied the lowest number of interventions and spent more time on the evaluation phase. She emphasised her role as evaluator. Most interventions were process organiser interventions, showing the application of a directive tutor style in guiding the learning process. She applied more content activator than content instructor interventions indicating that she preferred a supportive style in guiding knowledge construction.

### First story

Nancy presented herself as ‘I as energiser’ of the PBL process. In her opinion *“Boring PBL sessions are deadly for the students’ learning process”* (Int1). PBL needs to be interesting to students and Nancy felt responsible for *“the flow”* during PBL. She perceived a supportive style as more time consuming than a directive style. Nancy mentioned that time allocated to the PBL sessions is a big constraint for an effective PBL process. Therefore, she gives directive advice to students to speed up the PBL process. She observed that several students perceive PBL as a mandatory activity instead of a learning opportunity and that they lacked intrinsic motivation. Nancy expressed that she knows the principles of a learner-oriented approach to teaching but she explained that the educational context and student behaviour ‘force’ her to use teacher-oriented interventions.

Nancy has a lot of knowledge about the international hospitality industry and described herself as ‘I as hospitality expert’. She discovered that her students prefer directive tutors who explain relationships between theory and practice (external I-position). She is convinced that sharing her international hospitality knowledge stimulates the intrinsic motivation of students and without her interventions *“students do not learn enough”* (Int1). Therefore, she applies teacher-oriented interventions. Both internal I-positions “I as energiser” and “I as hospitality expert” refer to Nancy’s felt responsibility to activate students.

Nancy positioned herself as ‘a protector of students’ and ‘an evaluator of the learning process’. Nancy reinforced that group dynamics are important for the learning process. She suggested that an important task of a tutor is that all students feel safe and get the opportunity to contribute to the PBL process. Nancy described herself also ‘as a demanding and strict tutor’. Setting PBL rules, time management, asking critical questions and addressing students when they are not prepared or do not participate are also the tasks of a tutor in

her view. Especially at the start of the module she demands a lot of students, as she reported: *"You should come in as a bitch, you can always become nice along the way"* (Int1). According to Nancy other modules are less demanding and therefore, students need more direction than is desirable because *"I have to deal with the legacy of other modules"* (Int1). This can be seen as an external barrier. The two I-positions "I as protector" and "I as evaluator" both refer to students' behaviour in a group and emphasise the external position that she would like 'to care for students'. Boundary experiences were hardly identified in the first story.

## Second story

Although Nancy applied the lowest number of verbal interventions in PBL1 and PBL2, she discovered during the collective meetings that she directs students using strong non-verbal behaviour. As Nancy articulated it: *"My non-verbal behaviour is expressive. Like students said: I should not play poker"* (CM).

During the collective meetings Nancy observed herself from a meta-position, realised that a tutor should stay in the background and should wait to intervene. In doing so, students become more actively involved in the learning process by taking responsibility for the PBL session. She asked herself: *"How can I challenge students so they make sure that all students enjoy the PBL session?"* (CM). Although she understands that she should support students to construct knowledge, she tends to provide students with information and she wants to share her experiences in the hospitality industry with students. Nancy perceives the balance between supporting and directing knowledge development as difficult. She reflected on the I-positions and voiced other possible perspectives (expanded position): *"I know that I am too directive, but what happens when I do not direct students to a certain topic? I realise that I do not trust students' capabilities to manage their own learning process"* (Int2).

PBL2 showed that Nancy encouraged students to take responsibility for the learning process and to reflect on the PBL process. However, she used a more directive tutor style regarding knowledge construction. A note of caution is warranted here, as the total number of interventions in both PBL sessions was low.

## Conclusion

In the first story Nancy expressed strong beliefs about supporting PBL. She regularly started a sentence by saying: *"It is important that..."*. Therefore, Nancy's I-positions were easy to recognise. In the second story Nancy showed that

she was able to evaluate and recognise a pattern in her own tutor behaviour from an expanded and meta-position. In general, no big differences were found between her first and second story. Possible explanations might be that non-verbal behaviour and the evaluation phase of the PBL sessions were not included in the analysis of teaching behaviour. Another reason could be that Nancy's strong beliefs about how to support PBL and the lack of boundary experiences did not 'force' her to change her behaviour.

## 5.5 Conclusions and discussion, limitations and recommendations

The main purpose of the present study was to explore the extent to which a dialogue stimulates teacher professional identity development and encourages teachers to apply more learner-oriented interventions during PBL. Firstly, our findings suggest that dialogues about teachers' visions on the approach to teaching are less productive than dialogues about actual teaching behaviour (see also Hattie, 2009 and Van de Bos & Brouwer, 2014). In dialogues about their vision, teachers tended to use Victimisation, Entitlement, Rescue and Blame (VERB) to justify their teacher-oriented behaviour using; these dialogues lacked depth and resulted in superficial commitments. As a result, teachers were not able to de- or re-position themselves. It was not until teachers were confronted with the video-episodes of their actual teaching behaviour that they started to reflect on the beliefs underlying their teaching behaviour. Looking at the video-episodes apparently produced a boundary experience that enabled teachers to recognise their dominant I-positions and to start a process of interpretation and re-interpretation of these positions. They recognised their predominantly teacher-oriented interventions although initially they justified their teaching behaviour by referring to external barriers (including the behaviour of colleagues) that hindered them to make a shift to learner-oriented teaching behaviour.

A second conclusion is that TPI development towards a learner-oriented approach seems to be influenced by the robustness of teacher-oriented I-positions. Teachers who demonstrated the strongest teacher-oriented I-positions showed hardly any doubts. They positioned themselves as hospitality experts and felt the need to share their experience and knowledge with students. They also expressed that 'my students' (indicating an external I-position) expect that teachers link theory to practice and prepare students for the result-oriented way of working

in the hospitality industry. Moreover, they described hardly any boundary experiences and were reluctant to leave their comfort zone. They tended towards assimilation, adapting the context to their existing I-positions. The teachers who articulated less strong I-positions voiced less strong beliefs about teaching and learning, and they were less confident about their teaching behaviour. It seemed that these teachers felt the tension between learner-oriented and teacher-oriented positions, specifically when they were confronted with their actual teaching behaviour. As a result, they were able to move between the positions in response to the context; however, they were still exploring the 'right' balance between the various positions. These teachers were more conscious of their own capabilities, were able to observe their own behaviour from a meta-position, were not afraid to show their vulnerability and were, therefore, able to reflect on their unbalanced I-positions and, eventually, to harmonise their I-positions. They were conscious of external barriers but instead of 'blaming' these, they referred to internal barriers that influenced their teaching behaviour (see also Ertmer, 2005). In the dialogue they referred to boundary experiences caused by a lack of their own skills to support students in a learner-oriented approach. To overcome these boundary experiences they responded with accommodation; they stepped out of their comfort zone and used experiments to further develop their facilitation skills.

Thirdly, this study shows that participating in a dialogue stimulates teachers to develop their TPI. Inquire and reflect on teaching behaviour seemed to be an important activator to start the development of TPI. This study shows that participation in a dialogue encourages teachers to change and experiment with their teaching behaviour. Compared to PBL1, all four teachers substantially reduced the number of interventions at PBL2. Three out of four teachers not only applied half the number of interventions but also increased the number of learner-oriented interventions, indicating a beginning move from a directive to a supportive tutor style. Despite this change all teachers continued to use a mostly directive tutor style. Overall, teachers found it easier to decrease the number of teacher-oriented interventions than to increase learner-oriented interventions, specifically process observer interventions. Teachers found it difficult to observe, evaluate, diagnose and monitor the students' learning process.

Taken together, the findings of this study suggest that the development of TPI depends on the quality of the dialogue. They show also that teachers need a dialogue with others to prevent VERB, and to begin to articulate their I-positions by answering the question "how to understand my teaching experiences"

(Sachs, 2005, p. 15). In addition, this study shows that teachers are able to construct meaningful narratives about their experiences and in doing so 'shape' their identity. However, teachers with strong dominant I-positions are less able to move between I-positions and to move from a first story to a second story. They have more difficulties to develop a meta-position. Therefore, it is important to pay attention to these teachers during collective meetings. Further research regarding the influence of differences between teachers with strong I-positions and those with less strong I-positions on TPI development would be worthwhile. The four factors of collective learning structure the dialogue and avoid that the meetings function on a superficial level. However, this study shows that teachers find it difficult to develop a shared vision about teaching and learning and to experiment collaboratively. Since the absence of a shared vision seems to be a barrier for collective action, an intensive dialogue is needed about teachers' visions about their approach to teaching. Such an intensive dialogue requires transformational leadership (Draaisma, Meijers, & Kuijpers, 2017; Lodders & Meijers, 2017). The collective meetings support teachers to become aware of their boundary experiences. Specifically, the use of video-episodes seems crucial to stimulate teachers to reflect on their teaching behaviour and to re- and deposition themselves. An on-going collective learning process not only encourages teachers to change their behaviour individually but also has the potential to lead to collective action.

Although as a result of dialogue teachers become aware of their teaching behaviour and are encouraged to move towards a learner-oriented approach to teaching, they keep struggling with the supportive teaching style. An explanation for this might be that teachers have to fulfil both teacher-oriented and learner-oriented teacher roles in a hybrid PBL curriculum. In such a curriculum teachers should be able to shift among various I-positions. Therefore, teachers have to deal with conflicting I-positions, which causes uncertainty. In order to deal with this uncertainty a type of dialogue is needed that does not by definition seek consensus, but assumes pluralism and even benefits of conflict (Chiva, Alegre & Lapiedra, 2007, Castelijns, Vermeulen & Kools, 2013). To support teachers to apply learner-oriented interventions and internalise learner-oriented teaching behaviour, it is important to stimulate this kind of dialogue within processes of collective learning.

Several limitations of this study need to be acknowledged. The first limitation is the small sample size and the participation of tutors from one and the same educational programme. That said, the present study was a longitudinal

study and used various research methods to gain insight into TPI development, which strengthens the research. However, including more participants would give more insight into TPI and collective learning. The second limitation is that teaching behaviour in a hybrid curriculum was observed. It would be interesting to investigate teacher professional identity development in programmes that are fully learner-oriented. Are teachers in these programmes better able to harmonise their I-positions? Another limitation is that only ‘formally organised’ dialogues were included in this study. Further research is needed to explore the importance of informal dialogues with others and of feedback from students for TPI.

The current study shows that collective meetings stimulated teachers to start an on-going dialogue about their approach to teaching and to experiment with various facilitation strategies from a promoter position. Therefore, educational programmes and/or school leaders should encourage teachers to start such dialogues. Dialogues about video-episodes appear to act as a ‘wake-up call’. These dialogues ‘force’ teachers to gain insight into their I-positions, to express their boundary experiences and they support teachers in moving from a ‘first’ to a ‘second story’ (Meijers & Lengelle, 2012). Structural conditions, for instance team sizes, team characteristics and time issues are important to consider as well when supporting dialogues (Vangrieken et al., 2015). Nevertheless, it is paramount that teachers perceive the dialogue as supportive for the development of their professional identity.





## 6. Moving from a teacher-oriented to a learner-oriented approach to teaching: Conclusions, discussion and recommendations

### 6.1 Introduction

*The test of a good teacher is not how many questions he can ask his pupils that they will answer readily, but how many questions he inspires them to ask him which he finds it hard to answer*  
(Alice Wellington Rollins, 1895, p. 78)

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As mentioned at the outset of this research many universities have adopted a learner-oriented approach to teaching to help students develop the necessary competencies to position themselves in a rapidly changing society. The present study took place at a University of Applied Sciences that adopted problem-based learning (PBL) more than 30 years ago. PBL is a learner-oriented approach to teaching that emphasises self-directed, constructive, contextual and collaborative learning (Dolmans, De Grave, Wolfhagen, & Van der Vleuten, 2005). A learner-oriented approach requires other teaching behaviour than a teacher-oriented approach to teaching does (Harris, Leithwood, Day, Simmons, & Hopkins, 2007). Teachers in a learner-oriented approach to teaching are expected to facilitate students' learning. However, it appears that teachers have difficulties in applying learner-oriented teaching interventions (Hung, 2011; Windschitl, 2002). Since a lot of universities have adopted learning environments in which teachers are required to apply a supportive teaching style (Loyens & Gijbels, 2008) *the aim of this study was to explore to what extent teachers can be facilitated in moving towards a supportive teaching style*. To answer the main question, four studies were conducted focusing on teaching behaviour, teacher beliefs about teaching and learning, teacher professional identity development and collective learning.

Teacher interventions are of vital importance to students' learning process (Barrett & Moore, 2011; Zwaal & Otting, 2010). In a learner-oriented curriculum it is expected that teachers use a supportive teaching approach and are able to apply cognitive apprenticeship guiding strategies such as modelling, coaching, scaffolding, articulation, reflection and exploration (Collins, Brown, & Newman, 1989). Previous research already demonstrated that teachers struggle with these strategies (Dolmans, Gijssels, Moust, De Grave, & Wolfhagen, 2002; Donche, 2005; Oolbekkink-Marchand, Van Driel, & Verloop, 2006). Therefore, the first study investigated to what extent teacher interventions in PBL sessions were in line with the learner-oriented approach to teaching. Since teacher beliefs about teaching and learning have an influence on teaching behaviour (Oolbekkink-Marchand et al., 2006; Pajares, 1992), the second study compared teachers' beliefs about teaching and learning with their actual teaching behaviour and attempted to explain the discrepancy between teacher beliefs and teaching behaviour. In the first two studies teachers of the Hospitality Management programme participated.

Collective learning is often seen as a stimulator to decrease the discrepancy between beliefs and behaviour (Hoekstra, Brekelmans, Beijaard, & Korthagen, 2009; Thoonen, Sleegers, Peetsma, & Geijsels, 2011). Hence, the aim of the third study was to investigate the relationship between perceived collective learning, teacher beliefs and teaching behaviour. Teachers of two social-educational (Social Work and Teacher Education for Primary Schools) and two management (Hospitality Management and Tourism Management) programmes participated in this study. As teacher professional identity is the most important indicator for teaching behaviour (Beijaard, Meijer, & Verloop, 2004) the fourth study explored to what extent collective learning meetings supports teachers in developing their teacher professional identity towards a learner-oriented approach to teaching. In study four teachers of the Hospitality Management programme participated.

## 6.2 Conclusions and discussion

### 6.2.1 *Teaching behaviour*

In a learner-oriented teaching environment, teachers facilitate students in becoming self-directed learners who are able to construct knowledge in collaboration with others. Teachers should show supportive teaching behaviour. To investigate whether teachers use a supportive instead of a directive teaching style, teachers of four different programmes were observed in PBL sessions.

PBL sessions were divided into three phases: Starting phase (who started the session?), the main phase (number and nature of teacher interventions) and the evaluation phase (feedback on individual or group evaluation). Observation categories were developed to classify teacher interventions in the main phase as either teacher-oriented or learner-oriented. Teacher-oriented interventions were divided into content instructor (directive behaviour in guiding content) and process organiser (directive behaviour in guiding process) interventions. Learner-oriented interventions were divided into content activator (supportive behaviour in guiding content) and process observer (supportive behaviour in guiding process) interventions.

In general, observed teachers demonstrated (studies one, two and three) a wide range in the number of interventions used in the main phase of PBL (from 17 to 130) and applied more teacher-oriented interventions (content instructor and process organiser) than learner-oriented interventions (content activator and process observer). This indicates that the participating teachers tend to demonstrate directive teaching behaviour in guiding content and process. They transmitted knowledge, controlled the subject, summarised the findings and structured the learning process. Contrary to stimulating self-directed learning, teachers took the initiative to organise the PBL session and struggled with applying facilitation strategies to stimulate students to take responsibility for their own learning process. Teachers showed directive behaviour in the starting and evaluation phases of PBL as well. Most teachers organised both phases. Teachers who took the initiative in the starting phase continued their directive teaching behaviour in the main phase of PBL. Moreover, most teachers gave mainly feedback on individual learning. In general, teachers seemed to have difficulties with cognitive apprenticeship guiding strategies (Collins et al. 1989) and found it difficult to give up control of the learning process.

Observations of teachers of four programmes (study one, two and three) showed that only one quarter of the interventions could be categorised as learner-oriented. Based on the observations of teachers' interventions, it was concluded that teachers found it easier to apply supportive teaching behaviour in guiding the learning content than in guiding the learning process. Specifically, in guiding the content, teachers were more focused on contextual learning than on constructive learning. It appeared that interventions intended to activate students to share their experiences and to link theory to practice were less difficult to apply than interventions intended to stimulate students to develop conceptual thinking strategies. Specifically, teachers struggled with asking deep-approach

questions to encourage students to construct knowledge. These observations are in agreement with the findings of Aarnio, Lindblom-Ylänne, Nieminen, and Pyörälä (2014) and Neville (1999). In addition, teachers rarely diagnosed the collaborative learning process and it seems they found it difficult to give feedback on group performance. Hence, they showed hardly any supportive teaching behaviour in guiding the learning process.

### *6.2.2 Teachers' beliefs and teaching behaviour*

To identify teachers' beliefs about teaching and learning, teachers were asked to fill in the questionnaire 'Beliefs about teaching and learning' (Hoekstra et al., 2009). This questionnaire clearly distinguishes teacher-oriented from learner-oriented beliefs. To make it possible to compare beliefs and behaviour, the questionnaire items were related to two teacher-oriented (content instructor and process organiser) and two learner-oriented (content activator and process observer) categories. Findings of studies two and three showed that teachers who participated more strongly agreed with learner-oriented beliefs than with teachers-oriented beliefs. Therefore, most teachers were classified as learner-oriented in terms of their beliefs. Consequently, teachers agreed more with self-directed, constructive, contextual and collaborative learning than with externally-directed, reproductive and individual learning.

However, comparing teacher beliefs with teaching behaviour revealed an inconsistency between the ideas teachers believe guide their teaching behaviour (espoused theory) and the beliefs that actually guide their teaching behaviour (theory-in-use). In general, teachers are not aware of the inconsistency between what they say they believe and what they actually do (Argyris & Schön, 1996). Although teachers agreed more with and believe in the learner-oriented approach to teaching, they predominantly demonstrated teacher-oriented behaviour. It appears that teachers had difficulties to transform their learner-oriented beliefs into learner-oriented teaching behaviour. Teachers showed incongruence in orientation (content or process oriented) as well as incongruence in teaching style (directive or supportive). Four types of teachers were identified (study 3) on this basis: (1) teachers who believe in supporting the content but focus on directing the content. They showed congruence in orientation but incongruence regarding their teaching style; (2) teachers who believe in supporting the process but focus on directing the process. They showed congruence in orientation but incongruence in their teaching style; (3) teachers who believe in supporting content or process but focus on directing the content or process. They showed incongruence in orientation and teaching style; and finally (4) one teacher who

believes in directing the content and also focused on directing the content. This teacher showed congruence in orientation and in teaching style. However, his beliefs and behaviour were not consistent with the learner-oriented approach to teaching.

It is important to keep in mind that teachers, who were classified as learner-oriented concerning their beliefs, did not fully reject teacher-oriented beliefs and teachers who were classified as teacher-oriented regarding their behaviour also applied learner-oriented interventions. Subsequently, teachers who agreed more with supportive teaching behaviour also partly agreed with directive teaching behaviour and teachers who demonstrated more directive teaching behaviour also partly showed supportive teaching behaviour. The mixture of teacher-oriented and learner-oriented beliefs and behaviours was also shown in the way teachers described their teacher role during the interviews. They used both approaches in presenting the way they perceived their teacher role.

### ***6.2.3 Explanations for the discrepancy between teacher beliefs and teaching behaviour***

Extrinsic and intrinsic barriers can explain the discrepancy between beliefs and behaviour (Ertmer, 2005). Extrinsic barriers refer to factors in the learning environment, which ‘force’ teachers to apply a directive teaching style (Moust, Van Berkel, & Schmidt, 2005). Intrinsic barriers refer to teachers’ beliefs about teaching and learning (Kim, Kim, Lee, Spector, & DeMeester, 2013).

#### **Extrinsic barriers**

During the interviews (study two) and collective meetings (study four) teachers mentioned various extrinsic barriers that hinder them to apply learner-oriented interventions. Firstly, a hybrid PBL curriculum includes teacher-oriented components, such as lectures. Consequently, next to a supportive teacher style in PBL, teachers are also expected to apply a directive teacher style in these lectures. Therefore, teachers have to move between supportive and directive teaching behaviour. Moreover, teachers explained that the way PBL is embedded in the curriculum does not fully contribute to constructive and self-directed learning. For instance, the assessment methods are not in line with the learner-oriented approach to teaching. Most assessment methods are teacher-oriented, requiring memorisation and reproduction of knowledge. The learner-oriented approach focuses on construction, designing, or creating knowledge. Teachers are inclined to instruct students how to cover the content to ensure that students are well-prepared for the assessment (Moust et al., 2005).

Secondly, teachers mentioned poorly written or too structured problem scenarios and the prescriptive character of the tutor manuals as reasons for using directive teaching behaviour. In the tutor manuals, learning outcomes, the 'right' solution for the problem and relevant literature are mentioned. Beforehand, teachers, in their role as case developers, determined the knowledge and skills needed to solve the problem, which is more suitable for problem-solving than problem-based learning (Savin-Baden, 2000). Hence, teachers perceived no alignment between a learner-oriented approach to teaching and the way PBL is embedded in the curriculum. It is important to mention that most teachers take on, next to their teacher role in PBL, the role of curriculum designer, task writer and/or assessment developer. They are, therefore, responsible for these barriers themselves. It seems that teachers, consciously or unconsciously, tend to incorporate teacher-oriented factors in these other roles. Thus, the teacher-oriented approach to teaching is reflected in the way teachers teach and in the way they develop the curriculum. In other words, teachers develop their own extrinsic barriers. Hence, it is important to keep in mind that a PBL approach is more than changing teaching behaviour. A PBL approach requires a change in the way of thinking about teaching and learning and a change in all components of the curriculum. In other words, "PBL is a holistic educational approach" (Moust et al., 2005, p. 676)

Thirdly, according to teachers (interviews study two and four), another external barrier to PBL, lies in the capabilities of their students. Teachers seemed to have no confidence in students' capabilities to direct their own learning process. Specifically, teachers experienced that novice students are not competent in self-directed learning and therefore they need more directive teaching behaviour. Studies of the development of the brain of young people support these experiences and emphasise that students need support to become self-directed learners (Jolles et al., 2006). Moreover, most students' prior educational experiences were teacher directed. According to De Boer and Otting (2011), with adequate teacher support, students are able to quickly adapt to the PBL system. Specifically in the beginning of the first year, teachers should support activities that act as a scaffold for students to develop self-directed, collaborative and constructive skills. Hence, students need support to adjust to the learner-oriented approach to teaching (De Boer & Otting, 2011).

### **Intrinsic barriers**

Ertmer (1999, 2005) explained that the absence of the extrinsic barriers does not automatically lead to a more learner-oriented approach to teaching because

next to extrinsic, intrinsic barriers influence teaching behaviour. In study two findings from the interviews showed that the way teachers think about teaching and learning and the way they interpret their teacher role both have an impact on teaching behaviour. Although teachers prefer to apply supportive teaching behaviour, the way they described the teacher role and the way they intervened during the PBL sessions were more related to directive teaching behaviour. It appears that teachers' central beliefs are predominantly teacher-oriented while their peripheral beliefs are more learner-oriented. Central beliefs are difficult to change and more integrated in their teaching behaviour than their peripheral beliefs (Haney & McArthur, 2002). An explanation might be that most teachers are, because of their own experiences as a student, used to a teacher-oriented approach to teaching. Many teachers do not have experiences as a student in a learner-oriented environment.

In addition, interview results of study two showed that teachers were not convinced about their own learner-oriented facilitation skills. Teachers did not know how to apply various learner-oriented guiding strategies, which caused insecurity and, therefore, they tended to fall back on teacher-oriented teaching behaviour. Hence, the way teachers would like to teach conflicts with the way they actually teach.

Taken together, the transition from a teacher-oriented to a learner-oriented approach is a far from easy process. Although observed teachers would like to apply learner-oriented interventions, they have difficulties integrating these strategies into their teaching behaviour. Teachers seemed to have difficulties to position themselves in relation to this other approach to teaching (Vandamme, 2014). Consequently, this might lead to tension in their professional identity as a teacher.

#### **6.2.4 *Collective learning***

Teachers who are involved in collective learning are more likely to move to a learner-oriented approach to teaching (Ashfort, Harrison, & Corley, 2008; Trigwell & Prosser, 2004). Collective learning supports teachers to become aware of their beliefs about teaching and learning and their teaching behaviour (Meirink, Meijer, Verloop, & Bergen, 2009). Teachers expressed in the interviews of study two that they experience a lack of opportunities for training and collective learning, that they hardly make their beliefs and behaviour explicit and rarely experiment with learner-oriented interventions.

In study three the teachers' perception of collective learning was investigated using questionnaires. This study demonstrated that all teachers perceived collective learning (shared vision, inquisitive dialogue, collective action, and reflection and evaluation) to some extent. Teachers of social educational programmes scored significantly higher on collective learning than teachers of management studies. This study demonstrated a positive relationship between perceived collective learning and learner-oriented *beliefs* however; this study could not confirm that collective learning leads to more learner-oriented teaching *behaviour*. This applies to both social-educational and management programmes.

There are several possible explanations for the lack of influence of collective learning on teaching behaviour. The first explanation is that most teachers are not used having a dialogue about their approach to teaching. They rarely make their beliefs explicit and barely evaluate and reflect on their teaching behaviour collaboratively (Lodders, 2013; Vangrieken, Dochy, Raes, & Kyndt, 2015). The second explanation for the lack of influence of collective learning could be the isolated ways in which teachers work (Vangrieken et al., 2015). Most teachers are used solving their own teaching problems. A third explanation can be found in the way collective learning is embedded in the programme which may influence the outcomes of the teachers' collaborative-learning process. Teachers expressed in the interviews that most teacher meetings have a set agenda focusing on information and organisational issues related to day-to-day teaching activities. These findings are in agreement with Lodders (2013) and Vangrieken et al. (2015) who showed, that reflection on teaching approaches and observing classroom activities rarely take place at universities. Consequently, it seems that these teachers do not feel the necessity to change their teaching behaviour and generally maintain their habitual teaching behaviour. However, study four demonstrated that collective meetings with a focus on the four factors of collective learning can stimulate teachers to change their teaching behaviour.

### 6.2.5 Dialogue and teacher professional identity development

Teacher professional identity can be considered one of the most important indicators for teaching behaviour (Beijaard et al., 2004). Therefore, teacher professional identity development is needed to realise a transition to a learner-oriented approach to teaching. Teacher professional identity consists of a multiplicity of I-positions (Hermans & Hermans-Konopka, 2010) and determines "how a teacher positions him or herself from inside out in a social construct" (Vandamme, 2014, p. 51). The development of teacher professional identity is



an on-going internal dialogical process between these I-positions (Hermans & Hermans-Konopka, 2010). According to the Dialogical Self Theory boundary experiences are needed to start the development of teacher professional identity. In other words, a situation of tension or a situation a teacher cannot cope with might act as a wake-up call. It can be seen as a stimulator to adjust existing I-positions and to develop a new way of understanding their teaching behaviour.

Study four demonstrated that teachers with strong I-positions, i.e. teachers who expressed strong beliefs and described hardly any boundary experiences, seemed to struggle with leaving their comfort zone more than did teachers with less strong I-positions, i.e. teachers who expressed less strong beliefs and described more boundary experiences. Moreover, teachers with strong I-positions tended to justify their teacher-oriented teaching behaviour by referring to extrinsic barriers. Teachers with strong I-positions used more self-defeating VERB-expressions (i.e. Victimisation, Entitlement, Rescue and Blame) (Baker & Staath, 2003) and seemed to have difficulties in evaluating and reflecting on their boundary experiences and intrinsic barriers. Consequently, these teachers found it difficult to move from the 'first story', in which they expressed only dominant I-positions to a 'second story' in which they were able to balance their I-positions and to shift among various I-positions (Akkerman, Admiraal, & Simons, 2012; Arvaja, 2016). This indicates that these teachers were less able to observe themselves and see linkages between their I-positions (meta-position). They were less able to explore and apply new teaching behaviour (promoter position).

Following the results of study three, a higher level of collective learning does not imply more congruence between beliefs and behaviour. Nevertheless, observations of a small group of teachers' collective learning process, in study four, demonstrated that collective learning enabled teachers to harmonise their I-positions. Moreover, the collective learning cycle (shared vision, inquisitive dialogue, collective action and evaluation/reflection) gave teachers 'a boost' to experiment with and reflect on learner-oriented guiding strategies and thereby bridge the gap between their learner-oriented beliefs and behaviour.

A dialogue in collective learning process is needed to stimulate the internal dialogue amongst the teachers' I-positions (Lengelle, 2016). Findings of study four showed that collective learning processes, in which a dialogue with other teachers plays an important role, can be considered as an activator of teacher

professional identity development. To encourage the dialogue, six collective meetings were organised (study four). Four teachers of the hospitality management programme were invited to participate. The four collective learning factors, shared vision, inquisitive dialogue, collective action and reflection, were used as basis for the meetings. In the first two meetings teachers were invited to share their vision about teaching and learning and in the third and fourth meeting teachers were invited to have a dialogue about their videotaped teaching practices. In the fifth and sixth meeting teachers reflected on their experiences with learner-oriented interventions and evaluated the collective learning meetings.

In the first two collective meetings teachers were not able to reflect on their own intrinsic barriers. They mainly reflected on extrinsic barriers to justify their teaching behaviour using VERB-expressions. Videos-tapes of teaching behaviour were used to stimulate teachers to reflect on and change teaching behaviour (Hattie, 2009; Van den Bos & Brouwer, 2014). After showing the videos of actual teaching behaviour, teachers started to reflect on their underlying beliefs about teaching and learning and their teaching behaviour. In addition, they started to have a dialogue about their ideas about teaching. These videos caused boundary experiences and after the confrontation with their own and others' teaching behaviour, teachers started to reflect on their intrinsic barriers as well. The observations of the collective meetings showed that teachers recognise their dominant I-positions and were able to interpret and re-interpret these positions. This study showed that boundary experiences are crucial to start the process of interpretation and re-interpretation of I-positions, followed by a meta-position and promoter position. Consequently, boundary experiences are necessary to develop and change a teacher's professional identity. To reflect on (boundary) experiences, the development of teachers' reflection skills is highly relevant (Korthagen & Vasolos, 2005).

### 6.2.6 *Main conclusions*

Overall, the findings of this research demonstrated that, despite more than 30 years of experience with a learner-oriented approach to teaching (PBL) at a University of Applied Sciences, most teachers still showed predominantly teacher-oriented behaviour instead of learner-oriented behaviour. It seems that teachers did not make the (mind) shift to supportive teaching behaviour. One of the explanations for the persistence of directive teaching can be found in extrinsic barriers. Teacher-oriented elements are embedded in the curriculum as well, which confuses teachers. Assessment methods, task descriptions

and other educational activities ‘force’ teachers towards directive teaching. However, these extrinsic barriers could not fully explain the predominantly teacher-oriented behaviour. Intrinsic barriers, e.g. beliefs about teaching and learning, also play a crucial role in teaching behaviour. These beliefs seem to be a deeply-rooted influence on the way teachers intervene in PBL. This can be explained by the fact that teachers are used to directive teaching behaviour and are insecure about their own learner-oriented facilitation skills.

This research was not able to confirm that a higher level of collective learning leads to more congruence between beliefs about teaching and learning. However, findings of observations in study four did show that the collective learning process (including the four factors) supports teachers in developing their teacher professional identity towards a more learner-oriented approach to teaching. Therefore, it can be argued that a dialogue is an essential first step towards teacher professional identity development.

## 6.3 Main contributions of this research

This research makes several noteworthy contributions to the exploration of collective learning and teacher professional identity development. The research focused on how teachers could be supported in developing their professional identity and move towards more learner-oriented teaching behaviour. The first contribution is that this research provides new insights into teachers’ beliefs and teaching behaviour. To gain more insight into the way teachers think about teaching and learning and into their teaching behaviour, mixed-methods (questionnaires, interviews, observations of PBL sessions and observations of collective meetings) were used. The newly developed intervention categories based on the four learner-oriented principles (self-directed, constructive, contextual and collaborative learning) and teacher-oriented principles (externally-directed, reproductive and individual learning) made it possible to explore and compare teacher beliefs with teaching behaviour. Most studies use self-perceptions (Bolhuis & Voeten, 2007; Hoekstra et al., 2009; Zwaal & Otting, 2010) or student perceptions of teachers to explore teaching behaviour (Boelens, De Wever, Rosseel, Verstraete, & Derese, 2015). This research compares teachers’ beliefs and behaviour and examines the latter using observations both before and after the collective meetings. Therefore, this research provides a deeper understanding of the discrepancy between teachers’ central beliefs (Haney & McArthur, 2002) and teaching behaviour, specifically in a PBL environment.

The second contribution of this research is that it provides insight into teacher professional identity development by using a narrative approach and concepts from Dialogical Self Theory (DST). Narratives articulating teachers' I-positions, meta-positions and promoter-positions provided an understanding of how teachers develop their professional identity. Complementary to the studies of Ligorio and Tateo (2007) and Vandamme (2014), who used semi-structured interviews and DST concepts to explore the relationship between teacher professional identity development and teaching practices, in this research interviews, observations of PBL sessions and of collective learning meetings were used. Hence, the longitudinal character of this study made it possible to gain insight into teachers' narratives.

The third contribution is the exploration of the influence of collective learning on teacher professional identity development towards a more learner-oriented approach. Collective learning meetings were organised. The four factors: shared vision, dialogue and inquiry, collective action, reflection and evaluation were included in the collective learning process. Observations of PBL sessions took place before and after the meetings. In line with studies by Gibbs and Coffey (2004) and Lodders (2013), findings of this research suggest a role for collective learning in stimulating teachers to reflect on and experiment with the learner-oriented approach to teaching. In addition, collective learning helped teachers to reflect on their intrinsic and extrinsic barriers.

## 6.4 Recommendations

### 6.4.1 *Activators of change: From PBL to Design Based Education (DBE)*

It is well known that universities change their educational policies regularly and as a consequence teachers have to adjust to educational innovations frequently. In most cases teachers are obliged to take part in these innovations. They might experience discrepancies between the educational policy and their own beliefs about teaching and learning (Terhart, 2013), which may lead to tensions and therefore some teachers adapt their teaching behaviour, while others do not (Beijaard et al., 2004). According to Terhart (2013) this explains why there is a lot of resistance against innovations in education and why most innovations are not successful. In addition, the organisational culture in most universities does not invite teachers to start a dialogue (Harris et al., 2007).

The university studied here has recently opted for Design Based Education (DBE) as its new learner-oriented approach to teaching and learning. PBL and DBE share the same fundamental learning principles: self-directed, constructive, contextual and collaborative learning (see Appendix D). The line of thought of DBE can be related to design thinking and to design-based research (Jackson & Buining, 2011; Stenden University of Applied Sciences, 2017). Through design thinking, which is a creative thinking process, students explore multitude problems from various points of view (Jackson & Buining, 2011). Moreover, DBE can bridge the gap between research and practice (Anderson & Shattuck, 2012). Characteristics of design-based research are (a) pragmatic relationships between theory and practice; (b) conducted in real-world settings; (c) collaborative and iterative cycles of analysis, design, implementation and redesign; (d) integrating mixed research methods and (e) contextual research results are connected with the design process and setting (Wang & Hannafin, 2005). In other words, DBE is a process of learning in which students actively construct knowledge collaboratively based on real-life cases. Students build their expertise based on prior knowledge and experiences using various research methods. Comparing the principles of PBL and DBE shows that these approaches to teaching share several common characteristics (see Appendix D). The difference is that in DBE the case descriptions are real-life assignments derived from the work field and that students develop a ‘prototype’ or ‘design’ for the real-life case within multidisciplinary teams (students from various university programmes). Students work together to develop a ‘prototype’ for the real-life case in a so-called ‘ateliers’ under the guidance of a teacher.

Traditional educational methods (e.g. lectures) do not match with the DBE learning environment (Stenden University of Applied Sciences, 2016). Therefore, the role of the teacher as knowledge provider will be minimised. The DBE teacher has to take the role of a coach who facilitates the (collaborative) students’ learning process (Stenden University of Applied Sciences, 2017) “by extensive questioning” (Jackson & Buining, 2011, p. 160).

Facilitating multidisciplinary teams, i.e. teams of students from various programmes, requires a focus on guiding the (collaborative) learning process by applying content activator and process observer interventions. This means that content activator and process observer interventions are predominantly needed to support students’ learning processes in DBE. Teachers monitor the students’ thinking process and encourage students to evaluate their own collaborative learning process. Moreover, teachers should help students feel comfortable in a

multi-disciplinary team and feel free to voice their own ideas and perceptions. In addition, teachers are expected to work with teachers of other programmes. They use each other's content expertise. An additional 'task' of DBE teachers is that they connect intensively with the professional work field, which means they talk to professionals, visit workplaces, and acquire for real-life assignments. Consequently, DBE requires a dialogue on three levels (triological process): a dialogue with students, other teachers (from various disciplines and programmes) and work field professionals (Meijers, Lengelle, Winters, & Kuijpers, 2017; Stenden University of Applied Sciences, 2016).

It is obvious that the change in educational vision is supposed to have an impact on teachers and necessary requires the development of their professional identity (Meijers & Hermans, 2018). DBE is an iterative instead of linear process (Jackson & Buining, 2011, p. 161), requires cognitive apprenticeship guiding strategies and dialogues on three levels. Therefore, a DBE process "can feel chaotic and uncomfortable" for teachers. These feelings can cause boundary experiences.

To promote the transition to DBE and to prevent history from repeating itself, recommendations on the teacher level are given below. Since teachers experienced external barriers applying learner-oriented interventions and need a consistent approach to teaching being put forward, recommendations on the institutional and curriculum level are also described in the following sections.

#### ***6.4.2 Recommendations on the teacher level***

To develop their professional identity it is important that teachers become aware of their central beliefs about teaching and learning (Haney & McArthur, 2002). As beliefs are seen as predictors of teaching behaviour, reflection on beliefs and behaviour are necessary. Self-reflection is needed to interpret and reinterpret teaching behaviour (Husu, Toom, & Patrikainen, 2008) from a meta-position and to move from the 'first' to the 'second' story, from an old story of identity to a new one (Lengelle, 2016). Reflection skills are crucial prerequisites for teacher professional identity development. Reflection is a mode of thinking that allows teachers to become critical, analytical, evaluative and creative thinkers (Mirzaei, Phang, & Kashefi, 2014).

Collective learning processes enable teachers to become aware of and reflect on their beliefs and behaviour (Postareff, 2007). Research showed there is a lack of collective learning in higher education (Vangrieken et al., 2015) and, moreover,

this dissertation showed, that collective learning does not lead automatically to collective action. Töytan, Tynjälä, Piirainen, and Ilves (2017) developed four hierarchically structured categories of teacher learning; (1) Individual learning (teachers prefer to learn individually and the motivation to change is caused by external pressure); (2) Collegial learning (teachers learn and interact with others, motivation to change is caused by external pressure); (3) Team learning (teachers share their skills and knowledge in active collaboration with others, solve collaborative problems and feel internal motivation for change); (4) Innovative partnership learning (community outside the university, teachers and professionals of the work field create and innovate together, changes are integrated in daily life). Töytan et al. (2017) demonstrated in their large-scale study, in which 1028 Finnish teachers of Universities of Applied Sciences participated, that most teachers tend to individual learning. In DBE it is expected from teachers that they reflect, create and innovate with other teachers from various programmes and work field professionals. Therefore DBE requires innovative partnership learning. It is important to keep in mind that innovative partnership will not develop automatically. Hence, there is a definite need to support teachers, educational leaders and work field professionals to develop this way of learning.

Communities of practice can stimulate collective learning experiences and are therefore pivotal in starting reflection and dialogue with other teachers and work field professionals. Teachers have the opportunity to explore and study the consequences for their teacher styles collectively. Both PBL and DBE experiences should be discussed. Through dialogue, teachers can discuss the similarities and differences of both approaches and give meaning to their own assumptions and to the assumptions of other teachers and work field professionals (Cunliffe, 2004).

This dissertation showed that teachers with strong teacher-oriented I-positions, initially tended, specifically in the first phase of the collective learning process (shared vision), to 'use' extrinsic barriers to justify their teacher-oriented teaching behaviour. It seems that teachers had difficulties to reflect on intrinsic barriers. These teachers 'used' Victimization, Entitlement, Rescue and Blame (VERB) to prevent to reflect on intrinsic barriers. Therefore, it is important to start by exploring teachers' individual level of reflective abilities. To develop teacher professional identity, core reflection is needed (Korthagen & Vasalos, 2010). Core reflection focuses on teachers' beliefs, which are 'powerful moderators' for teaching behaviour. Core reflection leads to teacher professional

identity development and consequently to long-term changes. The core reflection model of Korthagen and Vasalos (2005) supports reflection and enables teachers to develop to a higher level of reflection. This model has the form of an onion and consists of six levels: environment (external factors), teaching behaviour, competencies, beliefs (central and peripheral), teacher professional identity (I-position of the teacher) and mission (what drives the teacher).

A safe learning environment is needed to enable teachers to experiment with learner-oriented approaches to teaching. Teachers need to feel confidence and trust to reflect on their 'mistakes' (Hoekstra et al., 2009). The educational leaders and teachers should develop an open culture of learning in which mistakes are tolerated and are taken as a starting point for learning. DBE requires predominantly learner-oriented interventions (content activator and process observer interventions). Observations of PBL sessions demonstrated that teachers struggle specifically with process observer interventions. Teachers hardly applied any such interventions. Therefore, teachers should be facilitated to experiment with process observer and content activator interventions to develop supportive teaching behaviour.

Using the categories of the observation instrument can stimulate reflection. These categories can be used as a starting point for collaborative feedback. Teachers can with or without guidance from a facilitator, classify their own interventions as teacher-oriented (content instructor or process organiser) or learner-oriented (content activator or process observer). The questions "How do I intervene and what was the intention of the intervention?" and "How can I change the intervention to a learner-oriented intervention?" help teachers recognise their own behaviour. The question "Why do I prefer or apply predominantly teacher-oriented interventions?" encourages teachers to become aware of their beliefs about teaching and learning. Being confronted with video-episodes, containing one's own teaching behaviour was found to be a useful stimulator for dialogue and core reflection. It encouraged teachers to experiment with other approaches to teaching. Confrontation with one's own behaviour can cause boundary experiences and these can be an impetus for development and change. Indeed, these experiences can be seen as 'wake-up calls' to activate teachers to question their teaching behaviour. Therefore, it is recommended to use video-recordings as a tool to promote reflection (Gelfuso & Dennis, 2014).

Narrative guidance can be used to help individual teachers to recognise boundary experiences, make sense of various I-positions in the landscape of their



minds and experiment with teaching behaviour outside their comfort zone (Hermans & Hermans-Konopka, 2010). Storytelling, personal diaries (Trif & Popescu, 2013) and writing expressive dialogues (Lengelle, 2016) are examples of narrative guidance that stimulate teachers to explain what is important to them and which internal and external voices influence their behaviour. An advantage of these narratives is that teachers are more likely to describe their emotions regarding their teaching practice (Avolos, 2011), which often sheds light on their motivation.

### ***6.4.3 Recommendations on the institutional level***

This dissertation demonstrated that more is needed than changing beliefs about teaching and learning to encourage teachers to move towards a learner-oriented approach to teaching. The management can facilitate teachers by developing a consistent approach to teaching (Williams, 2011) and being transparent about the way the approach to teaching should be embedded in the curriculum. In addition, the management and teachers should, in interaction, develop conditions such as structural time investment, scheduled time, and facilitation of the collective learning processes that stimulate teachers to experiment with other teaching behaviour. Moreover, it is important that educational leaders give teachers the opportunity to have a professional dialogue with managers, other teachers and work field professionals.

It appears that teachers cannot make the transition without support of educational leadership (Williams, 2011). Another ‘mode of thinking’ of educational leaders is required to encourage long-term changes in teaching behaviour (Postareff, Lindblom-Ylänne, & Nevgi, 2007). Educational leaders are key people in the collective learning process and in school improvement (Lodders, 2013; Thoonen et al., 2011). Support from educational leaders and an open school culture are important factors to motivate teachers to reflect on their teaching behaviour. Lodders (2013) showed that transformational leadership stimulates a higher level of collective learning and Thoonen et al. (2011) demonstrated that transformational leadership improves the ability to innovate. Transformational educational leaders inspire teachers to commit to a shared vision about the approach to teaching (Bass, 1999). Three dimensions of transformational leadership in educational settings are essential: vision building, providing individual support and providing intellectual stimulation (Lodders, 2013; Thoonen et al. 2011). Leaders should empower teachers as “co-constructors in the process of vision building” (Thoonen et al., 2011, p. 519) and stimulate ‘a culture of learning’ in teams in which evaluation and reflection are seen as crucial factors

for the collective learning process. In other words, leaders should encourage teachers to experiment with supportive teaching behaviour and give them the opportunity to make mistakes and reflect on their mistakes. Feelings of trust and safety in a team are vital for a high-quality culture of learning (Hoekstra et al., 2009; Lipshitz, Friedman, & Hughes, 2007).

Collective meetings supports programme teams to develop a shared understanding of the university's educational vision. Since DBE takes place in multi-disciplinary teams, dialogues among teachers from various programmes, are therefore recommended. In addition, before solutions or changes are integrated into the curriculum, teachers should get the opportunity to have a constructive dialogue about the educational vision, changes, developments, experiments and ideas. It gives teachers the opportunity to get involved and take the lead in the innovation process. This might lead to a 'collective second story' and as a consequence to collective action.

An on-going process of collective learning is needed. Therefore, opportunities to learn collectively should be created in the various university programmes. The four factors identified by Lodders (2013): shared vision, inquisitive dialogue, collective action, and reflection and evaluation should be embedded in the learning process. Specifically, a focus on the evaluation and reflection on outcomes of collective actions is needed (Lodders, 2013). Collective learning in small groups of teachers has proved to be effective, therefore it is recommended to organise collective learning in small groups. Taken together, a dialogue should be integrated into the learning culture of the university, which will lead to a less isolated way of working for teachers (Vangrieken et al., 2015) and will contribute to a higher regard for collective learning (Lodders, 2013).

Professional learning communities (Mertler, 2016) or communities of practice (Wenger, 1998) can be seen as a foundation for collective learning (Thoonen et al., 2012). Wenger (1998) describes communities of practice as groups of people who have a shared domain of interest, who build relationships to share information and engage in dialogues. During these dialogues, teachers make meaning of their experiences in education, shape and take on new identities and experiment with learner-oriented teaching practices. Dufour and Eaker (2008) described six characteristics of professional learning communities; (1) a shared vision; (2) a collaborative learning culture 'being able to learn from each other'; (3) collective inquiry; (4) action oriented; (5) continuous improvement; (6) focus on results. Some professional learning communities are formally organised

while others evolve more organically (Spronken-Smith & Harland, 2009; Wenger, 1998). Collective learning, therefore, can be an initiative of teachers themselves or the educational leaders of the programme. In addition, learning communities might prevent harmful effects of the isolation in which teachers frequently work. Teachers are used to solving their teaching problems alone, while collective learning initiatives help them start a dialogue about teaching issues and support them to change their ‘mode of thinking’. It is important to be aware that a change in the ‘mode of thinking’ and teacher professional identity development take a lot of time. Hence, longitudinal interventions and using various intervention methods (i.e. collective learning, observations) to support teachers’ identity development seems to be the most effective (Avalos, 2011).

#### 6.4.4 *Recommendations on the curriculum level*

An integrative approach of DBE, i.e. involving all curriculum elements, is crucial to encourage teachers to change their teaching behaviour. The mix of teacher-oriented and learner-oriented approaches between and within modules makes it difficult for teachers and causes professional identity conflicts. To prevent that teachers ‘use’ the curriculum as external barrier to apply learner-oriented interventions, it is recommended to be explicit about the way DBE standards should be integrated in the curriculum. The DBE standards are agreements about the way DBE should be embedded in the curriculum and they ‘describe a minimal approach for developing a DBE curriculum’. Therefore, DBE standards should be formulated and embedded in the curriculum as ‘a holistic and comprehensive approach, listing available drivers of change, and supporting the alignment of strategies’ (Edström & Kolmos, 2014, p. 545). Educational leaders and teachers of each programme should, after a dialogue and inquiry, decide *how* they integrate the DBE standards into their curriculum. Curriculum development in the context of DBE includes design standards such as, learning outcomes, curriculum design, workspaces, active learning methods, teachers’ competencies, and evaluation of the programme (Edström & Kolmos, 2014). These standards should be consistent. In addition, assessment methods, case descriptions, real-life cases should be developed in alignment with the DBE approach to teaching. Time for teachers to have a dialogue about and commitment are key principles in implementing these standards (Birenbaum et al., 2006).

As teachers specifically mentioned in interviews and collective meeting that assessment methods ‘force’ them to apply teacher-oriented interventions, a focus on assessment, therefore, is crucial. DBE assessment methods focus on assessment *for* learning, instead of assessment *of* learning. Assessment *of* learning is

summative, not embedded in the curriculum, context independent, is inflexible and drives the teaching (teaching for the test). Assessment *for* learning is formative, embedded in the curriculum, context specific and flexible (Birenbaum et al., 2006). Assessment *for* learning is more in line with the requirements of today's continually changing society and support students to develop life-long learning, analytical, conceptual, creative and collaborative and interpersonal competencies (Dochy, Segers, Van den Bossche, & Gijbels, 2003; Hoekstra et al., 2009). With support of policy makers and educational leaders teachers should be enabled to implement these assessment methods *for* learning.

The university describes three levels of DBE in its educational concept (2017): a relatively simple, an average and a complex DBE curriculum.

- In a simple DBE curriculum, 40% of the study load per module period (10 weeks) is approached as DBE. The other educational activities are thematic-interdisciplinary. The programme or teachers predominantly direct the content and learning process. Problems derived from the industry are unambiguous (well-structured).
- In an average DBE curriculum, 60% of the study load per module period is approached as DBE. The other educational activities support the DBE activities. Students partly direct the content and learning process. Problems derived from the industry are between unambiguous and complex.
- In a complex DBE curriculum, 80 to 100% of the study load per module period is approached as DBE. The educational activities are integrated in the DBE approach. Students direct the content based on learning outcomes. Problems derived from the industry are complex (ill-structured).

University programmes can choose one or more of these levels and can also start with simple to continue with average and complex. Although social constructivism is mentioned as the basis of the educational concept, as it was in the hybrid PBL environment, it appears that teachers are faced with various approaches to teaching and are probably expected to apply both teacher-oriented and learner-oriented interventions.

The following curriculum models can be used to start a dialogue about DBE in the university. Three models can be distinguished with regard to the level of self-directedness and the level of constructive learning (Hung, 2011):

- In a lecture-based curriculum, mono-disciplinary teams are represented. Content and learning process are externally directed. Case descriptions are based on literature and theory instead of on real-life problems. Lectures provide theory to help students to solve the problems. The solutions for the case problems are fixed and based on certain theories. Assessment methods focus on reproductive learning and summative testing is mainly used. Teachers apply predominantly teacher-oriented interventions and act as process organisers and content instructors.
- In a hybrid curriculum, mono-disciplinary and multi-disciplinary teams are involved. Content and learning process are partly externally directed and partly self-directed by students. Case descriptions are based on theory and practice; theory is the starting point for the case descriptions. Lectures are used to explain important key concepts. Solutions for the problems in the case descriptions are partly fixed and theories are recommended to solve the problems. Assessment methods focus on reproductive and constructive learning. Summative and formative tests are used. Teachers act as teacher-oriented process organisers and content instructors and as learner-oriented content activators and process observers.
- In a pure curriculum, multi-disciplinary teams are involved. There is a high level of self-directedness in content and process. Case descriptions are derived from real-life. Solutions are not fixed. Students are enabled to find solutions from multi-disciplinary areas. Assessment methods are focused on constructive learning and formative testing. Sustainable feedback is part of the assessment. Teachers act as learner-oriented content activators and specifically as process observers.

To avoid teacher professional identity conflicts, a pure (complex) DBE approach is recommended. In addition, it is important to be clear about the way DBE is embedded in the curriculum, about the expected teaching style in DBE and the embedding of other educational activities. In addition, the management should clarify how DBE standards should be integrated into the curriculum.

#### ***6.4.5 Limitations and suggestions for further research***

A number of limitations of this research need to be considered. The first limitation is related to the participants of this study. In studies one, two and four a small number of teachers was observed. In addition, the opportunities to control the selection of the sample were limited. Therefore, a self-selection bias might

be present. Teachers participated voluntarily, so it could be that teachers who were not open to feedback and reflection did not participate. However, the use of a mixed-methods design gave the researchers the opportunity to investigate teacher beliefs and teaching behaviour from various points of view. Moreover, all participants were teachers at one and the same university. This university adopted a learner-oriented approach to teaching more than 30 years ago. Therefore, teachers at this university might tend to give “socially desirable answers” (Williams, 2011). In future research, teachers from other universities, specifically universities with a more teacher-oriented approach to teaching should participate in the research. Similarities and differences between these teachers could provide more insight into teacher beliefs and teaching behaviour.

A second limitation is related to the way teacher beliefs and teaching behaviour are categorised. Although, the observation categories gave the opportunity to explore and compare beliefs and behaviour, the way teachers were categorised could partly explain the incongruence between teacher beliefs and teaching behaviour. Instead of a dimensional approach (Postareff et al., 2007) this research used a categorical approach (Ruscio, Ruscio, & Carney, 2011). Teacher beliefs and behaviour are brought down to one category, even though teachers also demonstrate beliefs and behaviour in the other categories. Teachers applied predominantly teacher-oriented interventions, however they also applied learner-oriented interventions. Similar results were found in the interview data. Teachers, categorised as learner-oriented in their beliefs, described teacher-oriented beliefs as well in the interviews or collective meetings. The interviews and collective meetings gave more insight into teachers’ beliefs than the questionnaire did. Therefore in future research, multi-dimensional profiles could be used (Trigwell & Prosser, 2004). Although a multi-dimensional profile likely provides more insight into teacher beliefs and teaching behaviour within the four intervention categories, using this profile would not have changed the overall conclusion of this research that teachers hold more learner-oriented beliefs and show more teacher-oriented behaviour. Moreover, using the observation instrument, only verbal teacher interventions were examined to determine teaching behaviour. Although non-verbal interventions also influence student behaviour (Feldman, 1990), these interventions were not taken into consideration in this research. It could be useful to investigate the influence of non-verbal interventions on student behaviour in future research.

The way perceived collective learning was investigated could be considered as another limitation. This study did not explore how exactly collective learning in the programmes was organised. The way collective learning was embedded in the programme (i.e. formally or informally) might have influenced the way teachers perceive collective learning. Therefore, in further research it is necessary to better understand how collective learning is integrated into the programme and it is important to explore the following questions: “Is collective learning seen as an informal process or formal?; “Who took the initiative for collective learning, was it teachers or managers?”, and “Were the goals of the process clear to teachers?”. Focus groups, observations of teacher meetings and case studies are recommended to explore the collective learning process. In addition, informal dialogues with other teachers and/or feedback from students might influence teachers to change their teaching behaviour (Hoekstra et al., 2009) and stimulate them to develop their professional identity. Therefore, it is recommended that the influence of student feedback and informal teacher dialogues be explored too. For instance, to what extent do they have an impact on teachers in moving from a first to a second story?

The fourth limitation is that this research did not investigate how teachers experienced the role of facilitator, even though this role in a collective learning process is relevant as well. Future research could focus on the facilitator’s role in the collective learning process. Finally, this study did not explore how teachers perceive their educational leaders. As mentioned before, to promote the empowerment of teachers to make a shift to a learner-oriented approach to teaching, the support of transformational leadership is needed. Therefore, it is also recommended to ascertain how teachers perceive their leaders. Questionnaires and interviews could be used to get more insight into how teachers perceive the support of the management.





# Summary

To prepare students for the continually changing society, Universities of Applied Sciences are challenged to develop learning environments that activate students to become independent employees with self-directed, analytical, collaborative and interpersonal competencies. Conventional (teacher-oriented) learning environments are considered less able to help students develop these competencies. In such environments, teachers direct students' learning process and focus on reproductive and individual learning. Students memorise and reproduce information individually, learn in an abstract manner, and hardly learn to link theory to practice. Conversely, in a learner-oriented environment, teachers support students' learning process and emphasise self-directed, constructive and collaborative learning. Such an environment enables students to construct knowledge together with others. Students are encouraged to make meaning of the content and relate theory to practice. Consequently, students learn to direct their learning process collaboratively and develop competencies needed for the current fast-changing society.

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Problem-based learning (PBL) is an example of a learner-oriented environment that can be considered a practice-, dialogue- and question-driven environment. PBL is based on four learning principles: self-directed, constructive, contextual and collaborative learning. PBL enables students to construct knowledge collaboratively by using ill-structured real-life problem scenarios as a starting point. Teachers are expected to act as facilitators and activators of the students' learning process and apply cognitive apprenticeship guiding strategies such as modelling, coaching, scaffolding, articulation, reflection and exploration. Instead of providing students with knowledge and directing the students' process, teachers support students to direct their own learning process by asking deep-approach questions. These questions stimulate students to articulate and explain their learning processes with the goal to explore other perspectives. In other words, teachers use a supportive teaching style to help students' learning process.

The present study took place at a University of Applied Sciences in the Netherlands that adopted a hybrid PBL curriculum more than 25 years ago. Four

programmes of this university participated in the study: two management programmes, International Hospitality Management (HM) and Tourism Management (TM), and two social-educational programmes, Social Work (SW) and Teacher Education for Primary Schools (PS). In a hybrid PBL curriculum, lectures and workshops are scheduled besides PBL sessions to provide students with knowledge that can help them solve the problem scenarios. PBL is a whole-curriculum design in which four thematic/interdisciplinary ten-week modules are integrated. Students work in small groups on problem scenarios derived from industry and solve the problems collaboratively. Students meet twice a week; in each session one of the students is chairperson (guides the PBL session) and one of the students is observer (observes and provides the group with feedback). Students use a seven-step approach to organise the PBL learning process and solve the problem

In a hybrid PBL curriculum approach, teachers are expected to shift their teacher role from knowledge transmitter to facilitator and activator of the PBL learning process. This indicates that most teachers have to change their teaching style from directive to supportive. The way teachers think about teaching and learning has impact on their teaching behaviour. However, changing teacher beliefs does not automatically lead to other teaching behaviour. Previous research showed that even teachers who agree with learner-oriented beliefs demonstrate teacher-oriented behaviour. Internal factors and external factors have an influence on the way teachers act in PBL. Changing teacher behaviour to a supportive teaching style requires the development of teacher professional identity. The way teachers describe themselves and the way they make sense of their teaching experiences are indicators for their professional identity.

Collective learning is a social and experiential process in which teachers share their experiences and visions about teaching and learning, inquire into ideas of other teachers, have a dialogue about different points of views, take collective action and evaluate and reflect on these actions. This process might stimulate the teacher professional identity development.

The central goal of this research is *to explore to what extent teachers can be facilitated in moving towards a learner-oriented approach to teaching and therefore to a supportive teaching style*. This research explores to what extent teachers have difficulties with a supportive teaching style and also provides a deeper understanding of why teachers struggle with this teaching style. In addition, this research investigates to what extent collective learning can support teachers

to develop their professional identity, which helps them to move to a learner-oriented approach to teaching. This research aims to contribute to the growing interest in collective learning in an educational environment and its influence on teacher professional identity.

Both qualitative and quantitative methods are used to provide a better understanding of factors that influence teaching behaviour and how collective learning can help teachers develop their teaching behaviour. Questionnaires, interviews, observations and narratives are used to provide a better insight into how teachers learn collectively and develop their identities. A newly developed observation instrument makes it possible to compare teachers' beliefs about teaching and learning with their teaching interventions during PBL (see study 1, 2 and 3), and to investigate to what extent the teacher interventions are in line with the learner-oriented or with the teacher-oriented approach to teaching.

### **Study 1: Teacher interventions in a problem-based hospitality management programme**

The purpose of the first study was to explore to what extent teacher interventions during PBL sessions are in line with the learner-oriented approach to teaching. Seven HM teachers participated in this study. These teachers facilitated PBL sessions of second-year students and used the same problem scenario during the observed PBL session. One session per teacher was audio- and video-recorded and transcriptions of each session were made. Each PBL session was divided into three phases: the starting phase (who takes the initiative: the teacher or the student?), the main phase (are teachers' verbal interventions teacher-oriented or learner-oriented?) and the evaluation phase (who takes the initiative and is the provided feedback on individual or group performance?).

To identify to what extent verbal teacher interventions in the main phase were in line with the learner-oriented approach to teaching, observation categories were developed based on the four PBL learning principles, self-directed, constructive, contextual and collaborative learning. Two teacher-oriented (content instructor and process organiser) and two learner-oriented (content activator and process observer) categories were developed. (1) Content instructor interventions are focused on directing the knowledge construction and on reproductive learning, (2) process organiser interventions on directing the learning process and on individual learning, (3) content activator interventions on supporting the knowledge construction and on contextual learning, and (4) process observer interventions on supporting the learning process and on collaborative learning.

Findings of this study showed that the observed teachers in general applied more teacher-oriented, content instructor and process organiser interventions than learner-oriented, content activator and process observer interventions. This indicates that these teachers preferred to take the initiative to structure the PBL session, transmitted knowledge and organised the PBL learning process. Specifically, teachers with the highest number of interventions applied relatively more teacher-oriented interventions than the other teachers did, and they showed predominantly a directive teaching style. Contrary to the self-directed learning principle, two out of seven teachers took the initiative to start the PBL session and these two teachers showed also the highest number of interventions in the main phase. All teachers started the evaluation. Moreover, this study showed that teachers who take the initiative to start and evaluate the PBL session continued this directive teaching style in the main phase. All teachers gave feedback on individual learning and only three teachers on the collaborative learning process.

The observed teachers also showed a number of learner-oriented interventions. They demonstrated more content activator than process observer interventions. It appears that teachers found it easier to support students to activate their prior knowledge about the subject, to link theory to practice, however they found it difficult to ask questions to stimulate students to construct knowledge. Teachers hardly demonstrated any process observer interventions. This suggests that they have difficulties with diagnosing and observing the collaborative learning process.

The main conclusion of this study is that the observed teachers use predominantly a directive teaching style to guide students in content and process. Consequently, students get little opportunity to take the responsibility for the learning process and are not encouraged to develop themselves as self-directed learners. They do not get the opportunity to develop their learning- and thinking strategies nor the interpersonal skills needed to cope with the continually changing society. Explanations for this might be that most teachers are educated in a teacher-oriented learning environment and since in a hybrid curriculum teachers are expected to apply teacher- and learner-oriented interventions, teachers did not change their professional identity towards a learner-oriented approach to teaching because.

## **Study 2: Explaining the discrepancy between teacher beliefs and teacher interventions in a problem-based learning environment: A mixed-methods study**

The second study aimed to determine and to explain the discrepancy between teacher beliefs about teaching and learning and teaching behaviour. Participants were 57 teachers of the HM programme. All participants fulfilled the role of teacher in PBL. Seven of these teachers participated in the observation part of this study. For each teacher, one PBL session of a second-year module was observed. PBL sessions were divided into the starting, main and evaluation phases.

Mixed methods were used to explain the discrepancy between teacher beliefs and teaching behaviour. Teacher beliefs were determined with the questionnaire 'Beliefs about teaching and learning' (Hoekstra, Brekelmans, Beijaard, & Korthagen, 2009). This questionnaire distinguishes items related to two teacher-oriented (content instructor and process organiser) and two learner-oriented (content activator and process observer) categories. Based on mean scores per category, teachers were classified into one of the four categories. Observations of PBL sessions were used to identify teaching behaviour. The interventions in the main phase were assigned to one of the four observation categories (see also study 1). Per observed teacher, the beliefs classification and the number of interventions per observation category were used to compare teacher beliefs with teaching behaviour. To explore the discrepancy between beliefs and behaviour the observed teachers were interviewed.

Findings of this study showed that teachers agreed more with learner-oriented than with teacher-oriented beliefs. Hence, teachers believe in self-directed, constructive and collaborative learning and a supportive teaching style. In contrast, the observations demonstrated that teachers predominantly applied teacher-oriented interventions. They showed hardly any learner-oriented interventions; specifically the process observer interventions were lacking. In addition, two teachers took the initiative to start the PBL session and all teachers took the initiative in the evaluation phase. Only three teachers gave feedback on the group performance. Subsequently, this study indicated that there is indeed a discrepancy between teacher beliefs and teaching behaviour. The observed teachers have difficulties with using a supportive teaching style, specifically with observing, evaluating, diagnosing, and monitoring the learning process.

The gap between beliefs and behaviour can be explained by intrinsic and extrinsic factors. Intrinsic factors refer to how teachers think about teaching and learning and how they interpret their teacher role. Although teachers agreed more with learner-oriented beliefs, the results of the questionnaire showed that teachers partly believe in externally-directed, reproductive and individual learning. In addition, findings of the interviews showed that teachers do not completely reject the directive teaching style. Teachers move between learner-oriented and teacher-oriented beliefs. Although all teachers agreed more with a supportive teaching style, in the interviews three teachers explained their role as directive. These three teachers showed the highest number of interventions, the most teacher-oriented interventions and they had less confidence in students' self-directed learning capabilities. Moreover, the self-confidence of teachers regarding their own learner-oriented facilitation skills was an important barrier for teachers. They struggled with just-in-time interventions and with the cognitive-apprenticeship facilitation strategies such as modelling, coaching, scaffolding, articulation, reflection and exploration.

Extrinsic factors refer to limitations in the teachers' environment. Teachers, for example, feel time pressure and therefore apply teacher-oriented interventions because these interventions are less time consuming. Another extrinsic factor teachers mentioned in the interviews was the way PBL is embedded in the curriculum. A hybrid curriculum requires both learner-oriented and teacher-oriented interventions. This indicates that teachers are expected to apply teacher-oriented interventions in lectures and learner-oriented interventions in PBL. Consequently, they have to switch between these two approaches to teaching. Next to that, the quality of the problem scenario, the detailed descriptions in the tutor manual and the assessment methods (knowledge tests), did not match the PBL principles, which 'forced' teachers to apply teacher-oriented interventions.

### **Study 3: Collective learning, teacher beliefs and teaching behaviour in management and social-educational studies.**

The first aim of the third study was to investigate to what extent teachers perceive collective learning within their programme. The second aim was to explore whether collective learning relates positively to learner-oriented beliefs and behaviour, and whether collective learning is related to the discrepancy between beliefs and behaviour. In total 90 teachers participated: 58 teachers of two management studies (HM and TM) and 32 teachers of two social-educational programmes (SW and PS). All participants fulfilled the role of PBL teacher.

Out of these 90 teachers, 22 of them (12 from management programmes and 10 teachers from social-educational programmes) were involved in the observational part of this study.

The 'Collective learning questionnaire' (Lodders, 2013) was used to identify to what extent teachers perceive collective learning within their programmes. Collective learning was examined using four factors: (1) shared vision, (2) dialogue and inquiry, (3) collective action and (4) evaluation and reflection. The 'Beliefs about teaching and learning questionnaire' (Hoekstra et al., 2009) was used to identify teacher beliefs about teaching and learning. Verbal interventions of one PBL session per teacher (22) were observed to investigate teaching behaviour. Teacher beliefs and teaching behaviour were compared using the four observation categories (see study 2). Teachers were classified in one of the four observation categories (content instructor, process organiser, content activator and process observer) based on the results of the questionnaire and the number of verbal interventions. In addition, the relationship between collective learning, teacher beliefs, teaching behaviour and the gap between beliefs and behaviour were investigated.

Most teachers of both programmes agreed more with learner-oriented beliefs; however, the observed teachers showed predominantly teacher-oriented behaviour. Teacher profiles demonstrated that most observed teachers prefer to use a directive teaching style as well. Teachers demonstrated a gap between teacher beliefs and teaching behaviour. There were no significant differences between the two programmes. This study indicated that teachers of social-education programmes perceived a significantly higher level of collective learning than teachers of management programmes. Social-educational programmes scored significantly higher on the factors shared vision and inquisitive dialogue.

Findings indicated a relationship between collective learning and learner-oriented beliefs. Although collective learning was positively related to learner-oriented beliefs, no relation was found between collective learning and learner-oriented behaviour. In addition, there was no evidence that a higher level of collective learning was related to more similar beliefs or similar teaching behaviour within teacher teams. This study could also not confirm a relationship between a higher level of collective learning and the extent of the gap between beliefs and teaching behaviour.

#### **Study 4: How can a dialogue support teachers' professional identity development? Harmonising multiple teacher I-positions.**

The purpose of the fourth study was to explore to what extent a dialogue supports teachers in developing their professional identity towards a learner-oriented approach to teaching. Dialogical Self Theory (DST) was used to analyse teacher professional identity development. DST approaches teacher professional identity as a dynamic multiplicity of I-positions. I-positions include both voices of teachers' own I-positions and internalised voices of others. DST stipulates that teachers' professional identity development starts with boundary experiences. A boundary experience is an experience in which teachers feel uncomfortable because they cannot cope with it. To develop teacher professional identity it is important that teachers overcome their boundary experiences by going 'from a first to a second story'. In a 'first story' they articulate their fragmented and not harmonised I-positions evoked by boundary experiences. In a 'second story' teachers are able to observe themselves from a meta-position and to explore other teaching behaviour from a promoter position. A dialogue is needed to support teachers to articulate their second story. Therefore, more specifically the aim of this study was to explore whether dialogue about boundary experiences helps teachers to develop their professional identity. Participants were four HM teachers.

A narrative research design was used and mixed methods were conducted to collect data. Firstly, PBL sessions of the four teachers were observed before and after the dialogue. Secondly, six collective meetings were observed and analysed. In these meetings the four factors (shared vision, inquisitive dialogue, collective action and evaluation/reflection) were integrated to stimulate the dialogue. In the inquisitive dialogue meeting, episodes of video-tapes of the first observed PBL session of each teacher were discussed. Thirdly, two individual interviews with the four teachers were conducted. The first interview took place before the collective meetings and aimed to start a dialogue about their teacher interventions in PBL. The second interview took place after the collective meetings and aimed to explore how teachers experienced the collective meetings.

Teaching behaviour of the four teachers was, based on the nature of their interventions in PBL, classified as teacher-oriented (content instructor or process organiser) or as learner-oriented (content activator or process observer). To compare the interventions before and after the collective meetings, teachers were classified for both observed PBL sessions. These observations and the transcriptions of the collective meetings and interviews were used to develop



case studies for each teacher. For each teacher a ‘first story’ and a ‘second story’ were presented using DST key concepts.

Findings of this study showed that the way observed teachers positioned themselves depends on the robustness of their teacher-oriented I-positions. Teachers with strong teacher-oriented I-positions saw themselves, for instance, as ‘a hospitality expert’ and described hardly any boundary experiences. They used more extrinsic barriers to justify their teaching behaviour than teachers who articulated less strong I-positions. These teachers used more VERB expressions (Victimization, Entitlement, Rescue and Blame). Teachers with less strong I-positions considered themselves, for instance, as ‘a member of the PBL group’ and described more boundary experiences. These teachers were more able to observe themselves from a meta-position and experimented more with learner-oriented interventions.

Collective learning is considered a stimulator for teachers to develop their professional identity. This study showed that the factor dialogue and inquiry in the collective-learning process stimulated the observed teachers to start a dialogue. In addition, this study showed that dialogues encouraged teachers to change their teaching behaviour. Teachers experimented individually with learner-oriented interventions but there was a lack of collective action. Observations of PBL sessions showed that teachers decreased the number of their interventions substantially and increased the number of learner-oriented interventions. In short, the dialogue seems to have encouraged teachers to move towards a supportive teaching style.

### Overall conclusion

The central goal of this research was *to explore to what extent teachers can be facilitated to move towards a learner-oriented approach to teaching*. Findings of this research demonstrated that the observed teachers indeed struggle with the supportive teaching style. Specifically, they have difficulties with diagnosing and observing the collaborative learning process. Intrinsic and extrinsic factors influence teaching behaviour. Examples of intrinsic factors are the way teachers describe their I-positions, articulate their boundary experiences, and their ability to observe themselves from a meta-position. In addition, teachers showed a lack of confidence in students’ self-directing capabilities and showed a lack of confidence regarding their own facilitation skills. Examples of extrinsic factors are the way PBL is embedded in the curriculum (other educational activities, problem-scenarios, assessment methods) and the way collective

learning is organised in the programmes. Collective learning helped teachers to develop their professional identity and to move towards a learner-oriented approach to teaching. Teachers who participated in the collective-learning meetings increased their learner-oriented interventions. Consequently, this research showed that collective learning might support teachers in reducing the gap between their beliefs and behaviour.

### **Practical implications**

To encourage teachers to apply learner-oriented interventions, collective learning should be initiated by teachers themselves or by educational leaders (formal or informal). Since teachers are used to solve their teaching problems individually, it is important to stimulate and encourage collective learning in which the four factors (shared vision, dialogue and inquiry, collective action and evaluation/reflection) are integrated. These four factors encourage teachers to reflect on their beliefs about teaching and learning, and to become aware of whether these beliefs are in line with the learner-oriented approach to teaching that most of them advocate. Reflective capabilities are of great importance for the development of the teacher professional identity. DST key concepts and the onion model of Korthagen and Vasalos (2010) can help teachers to reflect on and develop their professional identity. Specifically, teachers who express strong teacher-oriented I-positions need more guidance to reflect on their teaching behaviour than teachers who express less strong teacher-oriented I-positions.

Observations (video-taped sessions) confronted teachers with their teaching behaviour and proved to be crucial to start the dialogue about teaching behaviour. Teachers can use the observation categories (content instructor, process organiser, content activator, process observer) to identify the nature of their interventions and narrative guidance (i.e. storytelling, personal diaries and writing expressive dialogues) can stimulate teachers to express their I-positions.

An integral and transparent vision on teaching needs to be developed by school leaders and teachers because this will influence how the approach to teaching is embedded in the curriculum. Therefore curriculum standards, i.e. learning outcomes, curriculum design, workspaces, active learning methods, teacher competencies and evaluation of the programme should be developed, using an integrative approach. Educational leaders and teachers are key people in developing a clear vision on the learner-oriented approach to teaching. Transformational leadership can stimulate teachers to innovate, to commit to a shared

vision and to experiment with learner-oriented interventions. Consequently, teachers develop a 'collective second story'. In addition, feelings of trust and safety in a team will improve the culture of learning in a programme. 'Being able to learn from each other' can increase teachers' collective action within their programme.

### **Limitations and suggestions for further research**

The first limitation is related to the number of participants, specifically related to the number of observations. Moreover, all participants are employees of one particular University of Applied Sciences. In further research employees of more universities should be involved. The second limitation is the way teachers are categorised. In this research teachers are assigned to one of the categories, however teachers do not apply only teacher- or learner-oriented interventions. Future research could use a dimensional approach instead of a categorical approach. Another suggestion is to use focus groups and observations of teacher meetings to provide an understanding of how teachers learn collectively. Informal learning and feedback of students to teachers may also influence teacher professional identity development. A suggestion for further research might be to investigate to what extent informal learning and students' feedback influences the transition from a 'first story' to a 'second story'.



# Summary in Dutch (Samenvatting)

Hogescholen worden uitgedaagd om studenten goed voor te bereiden op een voortdurend veranderende samenleving. Deze samenleving vraagt onafhankelijke medewerkers die zelfsturende, analytische, interpersoonlijke en samenwerkende competenties bezitten. Conventionele (docent-georiënteerde) leeromgevingen worden beschouwd als leeromgevingen die niet goed in staat zijn studenten te ondersteunen om deze competenties te ontwikkelen. In deze leeromgevingen sturen docenten het leerproces van studenten en focussen zij zich voornamelijk op reproductief en individueel leren, waardoor studenten op een abstracte manier leren, en nauwelijks theorie en praktijk met elkaar leren te verbinden. Dit in tegenstelling tot de student-(lerende)-georiënteerde leeromgevingen, waarin docenten het leerproces van studenten faciliteren en activeren en zich focussen op zelfsturend, constructief en samenwerkend leren. De laatstgenoemde leeromgevingen stellen studenten in staat kennis te construeren in samenwerking met anderen. Studenten worden aangemoedigd betekenis te geven aan opgedane kennis en theorie en praktijk aan elkaar te verbinden. Hierdoor leren studenten het leerproces gezamenlijk te sturen en competenties te ontwikkelen die nodig zijn in de huidige samenleving.

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Probleemgestuurd onderwijs (PGO) is een voorbeeld van een student-georiënteerde onderwijsbenadering en is gebaseerd op vier leerprincipes: zelfsturend, constructief, contextueel en samenwerkend leren. Door gebruik te maken van vraagstukken uit de praktijk worden studenten in staat gesteld gezamenlijk kennis te construeren. Van docenten wordt verwacht dat zij het leerproces activeren en faciliteren door gebruik te maken van 'cognitive apprenticeship' begeleidingsstrategieën zoals modelleren, coachen, articuleren, reflecteren en exploreren. Daarnaast is het van belang dat docenten, daar waar nodig, het leerproces meer faciliteren en, daar waar nodig, minder faciliteren. In plaats van het overdragen van kennis en het sturen van het leerproces, stimuleren docenten, studenten zelfstandig hun eigen leerproces te sturen. Dit doen zij door het stellen van verdiepvragen die studenten aanzetten tot nadenken en analyseren en het leerproces te articuleren en te verklaren. Hierdoor leren studenten andere perspectieven te exploreren dan alleen de eigen perspectieven.

In andere woorden, een faciliterende en activerende docentrol ondersteunt het constructief leerproces van studenten.

Dit onderzoek heeft plaatsgevonden op een hogeschool in Nederland. Vier opleidingen van de hogeschool hebben deelgenomen aan het onderzoek, twee management opleidingen namelijk Hospitality Management (HM) en Tourism Management (TM) en twee sociale opleidingen, namelijk Social Work (SW) en Pedagogische Academie BasisOnderwijs (PABO). De hogeschool heeft meer dan 30 jaar geleden gekozen voor een hybride PGO curriculum. In een hybride PGO curriculum zijn naast PGO sessies, colleges en workshops opgenomen om studenten te voorzien van kennis en vaardigheden die kunnen helpen om een praktijkvraagstuk op te lossen. PGO is geïntegreerd in het hele curriculum, in thematische en interdisciplinaire modulen van tien weken. Studenten werken gezamenlijk, in kleine onderwijsgroepen, aan vraagstukken die ontleend zijn uit het werkveld. Studenten ontmoeten elkaar twee keer per week. In iedere sessie is één van de studenten voorzitter en één van de studenten is notulist. De voorzitter faciliteert het PGO proces en de notulist maakt en verspreidt de notulen van de bijeenkomst. Daarnaast is één van de studenten observator, deze student observeert, evalueert en voorziet de groep van feedback. Studenten gebruiken de zogenaamde zevensprong om de praktijkvraagstukken zo gestructureerd mogelijk op te lossen.

Van docenten in een hybride PGO curriculum wordt verwacht dat zij een 'shift' maken van kennisoverdrager naar facilitator en activator van het leerproces van studenten. Dit betekent dat de meeste docenten hun manier van doceren moeten aanpassen van een directieve naar een faciliterende en activerende docentstijl. De manier waarop docenten denken over doceren en leren heeft invloed op de manier waarop zij onderwijs verzorgen. Toch is gebleken dat opvattingen niet altijd invloed hebben op onderwijsgedrag. Eerder onderzoek heeft aangetoond dat zelfs docenten met voornamelijk student-georiënteerde opvattingen, docent-georiënteerd onderwijsgedrag laten zien. Interne en externe factoren blijken invloed te hebben op het onderwijsgedrag van docenten. Verandering naar een faciliterende docentstijl vereist een ontwikkeling van de professionele identiteit van docenten. De manier waarop docenten hun taken en gedrag beschrijven en manier waarop zij betekenis geven aan hun onderriservaringen zijn indicatoren voor hun professionele identiteit.

Collectief leren is een sociaal en ervaringsgericht proces waarin docenten de onderriservaringen en opvattingen over leren en doceren met elkaar delen.

Docenten komen hierdoor in aanraking met ideeën van andere docenten, voeren een dialoog over de verschillende gezichtspunten, handelen collectief en evalueren en reflecteren samen op deze handelingen. Dit proces kan de ontwikkeling van de professionele identiteit stimuleren.

Het centrale doel van deze dissertatie is te *onderzoeken op welke manier docenten gefaciliteerd kunnen worden om zich te bewegen naar een student-georiënteerde onderwijsbenadering*. Deze dissertatie onderzoekt in welke mate docenten moeilijkheden ervaren met de faciliterende benadering van onderwijs en geeft inzicht waarom docenten deze moeilijkheden ervaren. Verder richt dit onderzoek zich op welke manier collectief leren het ontwikkelen van de (student-georiënteerde) professionele identiteit kan stimuleren. Hiermee levert deze dissertatie een bijdrage aan de groeiende interesse in collectief leren in het onderwijs en de invloed van collectief leren op de ontwikkeling van de professionele identiteit.

Kwalitatieve en kwantitatieve methoden zijn gebruikt om meer inzicht te krijgen in welke factoren invloed hebben op het verzorgen van onderwijs en hoe collectief leren docenten kan helpen een student-georiënteerde docentstijl te ontwikkelen. Vragenlijsten, interviews observaties en narratief onderzoek zijn onderzoeksmethoden die gebruikt zijn om inzicht te krijgen hoe docenten collectief leren en hun identiteit ontwikkelen. Een nieuw ontwikkeld observatie-instrument maakt het mogelijk opvattingen over doceren en leren en de werkelijke interventies van docenten in PGO met elkaar te vergelijken (zie onderzoek 1, 2 en 3). Dit instrument maakt het mogelijk om te onderzoeken of deze opvattingen en interventies docent-of student-georiënteerd zijn.

### **Onderzoek 1: Interventies van docenten in een probleemgestuurd hospitality management programma**

Het doel van deze studie is te onderzoeken of de interventies van docenten in PGO sessies overeenkomen met de student-georiënteerde onderwijsbenadering. Zeven docenten van de hospitality management opleiding (HM) hebben deelgenomen aan dit onderzoek. Deze docenten faciliteerden PGO sessies in het tweede jaar van het programma. Studenten behandelden in deze sessie hetzelfde praktijkvraagstuk. Eén PGO sessie per docent is geobserveerd. De sessies zijn opgenomen op audio en video. Vervolgens zijn transcripties gemaakt van de dialoog tussen studenten onderling en tussen studenten en docent. PGO sessies zijn verdeeld in drie fasen: de startfase (wie neemt het initiatief om de sessie te beginnen, de docent of de student?), de hoofdfase (zijn de verbale interventies van docent student- of docent-georiënteerd?) en de evaluatiefase (wie neemt het

initiatief, docent of student en hoe wordt er feedback gegeven? Is de feedback gericht op individuele prestaties van studenten of op groepsprestaties?).

Observatie-categorieën zijn gebruikt om de verbale interventies van docenten te classificeren. Deze categorieën zijn gebaseerd op de vier PGO principes, zelfsturend, constructief, contextueel en samenwerkend leren en op basis hiervan zijn vier categorieën ontwikkeld: twee docent-georiënteerde categorieën: (inhouds-overdrager en procesorganisator) en twee student-georiënteerde categorieën (inhoudsactivator en procesobservator). (1) De inhoudsoverdragerinterventies zijn gericht op het overdragen van kennis en op het reproduceren van kennis, (2) procesorganisatorinterventies sturen het leerproces en individueel leren van studenten, (3) inhoudsactivatorinterventies faciliteren de kennisconstructie en het leren in de context en (4) procesobservatorinterventies faciliteren het leerproces en samenwerkend leren.

Resultaten van dit onderzoek laten zien dat de geobserveerde docenten meer docent-georiënteerde, (inhoudsoverdrager en procesorganisator) interventies pleegden dan student-georiënteerde (inhoudsactivator en procesobservator) interventies. Dit betekent dat deze docenten voornamelijk kennis overdragen en het initiatief nemen om het PGO proces te structureren en te organiseren. Docenten die ten opzichte van andere docenten meer interventies pleegden, gaven de voorkeur aan relatief meer docent-georiënteerde interventies. Zij toonden voornamelijk een directieve docent stijl. In tegenstelling tot het zelfsturende principe, namen twee van de zeven docenten het initiatief de PGO sessie te starten. Deze twee docenten pleegden ook het hoogste aantal interventies. Alle zeven docenten namen het initiatief om de evaluatiefase van de PGO sessie te starten. Docenten die het initiatief namen te starten met de PGO sessie vervolgden deze directieve docent stijl ook in de hoofd- en evaluatiefase van de sessie. Alle docenten gaven feedback op individuele prestaties, drie docenten gaven daarnaast ook feedback op de collectieve prestaties en het samenwerkend leren.

Docenten pleegden daarnaast een aantal student-georiënteerde interventies. Ze toonden meer inhoudsactivator- dan procesobservatorinterventies. Blijkbaar hadden docenten minder moeite met vragen te stellen waardoor voorkennis wordt geactiveerd en theorie aan praktijk wordt gekoppeld, maar docenten vonden het moeilijker vragen te stellen die studenten stimuleren kennis te construeren. Daarnaast vonden docenten het blijkbaar ook moeilijk vragen te stellen waardoor studenten het eigen (samenwerkings)proces diagnosticeren en evalueren.



De hoofdconclusie van dit onderzoek is dat de geobserveerde docenten voornamelijk een directieve docentstijl gebruiken, waardoor studenten nauwelijks de mogelijkheid krijgen eigen verantwoordelijkheid te nemen voor hun leerproces en nauwelijks aangemoedigd worden zichzelf te ontwikkelen als zelfsturende studenten. Mogelijke verklaringen hiervoor zouden kunnen zijn dat docenten zelf onderwijs hebben genoten in een docent-georiënteerde leeromgeving en dat docenten in een hybride leeromgeving werken waarin zowel docent- als student-georiënteerde interventies worden verwacht. Hierdoor kan het zijn dat docenten hun professionele identiteit niet volledig hebben ontwikkeld richting een student-georiënteerde leeromgeving.

### **Onderzoek 2: Het verklaren van de discrepantie tussen opvattingen van docenten en docent interventies in probleemgestuurd onderwijs: een mix van onderzoeksmethoden.**

Het eerste doel van het tweede onderzoek is vast te stellen of er sprake is van een discrepantie tussen opvattingen van docenten ten aanzien van doceren en leren en het werkelijk onderwijsgedrag. Het tweede doel van dit onderzoek is het verklaren van de discrepantie tussen opvattingen en gedrag. Deelnemers in dit onderzoek zijn 57 docenten van de opleiding Hospitality Management (HM). Alle docenten vervullen de rol van PGO tutor. Tweedejaars PGO sessies van zeven (van de 57) docenten zijn geobserveerd. PGO sessies zijn onderverdeeld in start-, hoofd- en evaluatiefase. Een mix van onderzoeksmethoden is gebruikt om de discrepantie tussen opvattingen en gedrag te verklaren. Opvattingen zijn gemeten door gebruik te maken van de vragenlijst 'Opvattingen over doceren en leren' (Hoekstra, Brekelmans, Beijaard, & Korthagen, 2009). De items van deze vragenlijst zijn gerelateerd aan twee docent-georiënteerde (inhoudsoverdrager en procesorganisator) en twee student-georiënteerde (inhoudsactivator en procesobservator) categorieën. Docenten zijn geclassificeerd op basis van de gemiddelde score op de opvattingen in één van deze vier categorieën. Interventies van docenten in de hoofdfase van de PGO sessie zijn ook toegewezen aan één van deze vier categorieën (zie ook onderzoek 1). Op basis van het aantal interventies per categorie zijn docenten geclassificeerd in één van de vier categorieën. Vervolgens zijn de resultaten van de classificatie van de opvattingen en interventies met elkaar vergeleken. Docenten zijn geïnterviewd om de discrepantie bestaat tussen opvattingen en gedrag te verklaren.

Bevindingen van dit onderzoek demonstreren dat participerende docenten het meer eens zijn met student-georiënteerde dan met een docent-georiënteerde opvattingen. Dit betekent dat docenten het meer eens zijn met zelfsturend,

constructief, contextueel en samenwerkend leren en met een faciliterende en activerende stijl van onderwijs verzorgen dan met extern sturend, reproductief en individueel leren en een directieve stijl van onderwijs verzorgen. Daarentegen, blijkt uit de observaties, dat docenten in PGO sessies juist overwegend docent-georiënteerde interventies pleegden. Docenten pleegden nauwelijks student-georiënteerde interventies, dit geldt vooral voor procesobservator interventies. Daarnaast namen twee docenten het initiatief om de PGO sessie te starten en namen alle docenten het initiatief in de evaluatiefase. Alle docenten gaven feedback op individuele prestaties van docenten en drie docenten gaven ook feedback op het groepsproces. Dit onderzoek geeft aan dat er inderdaad een discrepantie bestaat tussen de opvattingen en interventies van geobserveerde docenten. Deze docenten blijken moeite te hebben met de faciliterende docent stijl, vooral met het observeren, diagnosticeren, evalueren en monitoren van het leerproces.

Uit interviews met de geobserveerde docenten blijkt dat zowel intrinsieke en extrinsieke factoren het verschil tussen opvattingen en gedrag kunnen verklaren. Intrinsieke factoren refereren aan hoe docenten denken over doceren en leren en hoe zij hun docentrol interpreteren. Alhoewel docenten het meer eens zijn met student-georiënteerde opvattingen, de resultaten van de vragenlijst en van de interviews tonen aan dat docenten docent-georiënteerde opvattingen niet geheel verwerpen. Docenten bewegen zich tussen docent- en student-georiënteerde opvattingen. Uit de interviews blijkt dat drie docenten hun docentrol voornamelijk beschreven als docent-georiënteerd. Deze drie docenten pleegden de meeste interventies, de meeste docent-georiënteerde interventies en blijken minder vertrouwen te hebben in de zelfsturende competenties van studenten. Daarnaast blijkt dat docenten weinig zelfvertrouwen hebben in hun eigen faciliterende begeleidingsstrategieën. Docenten gaven aan het moeilijk te vinden wanneer ze moeten interveniëren (just-in-time) en moeite te hebben met modeleren, coachen, articuleren, reflecteren en exploreren.

Extrinsieke factoren refereren naar de beperkingen in de leeromgeving. Docenten gaven, bijvoorbeeld, aan door tijdsdruk meer docent-georiënteerde interventies te plegen omdat, in hun beleving, deze interventies minder tijdrovend zijn. Een andere, door docenten genoemde extrinsieke factor is de manier waarop PGO is ingebed in het curriculum. Een hybride PGO curriculum vraagt van docenten zowel student- als docent-georiënteerde interventies. Dit betekent van docenten wordt verwacht dat zij in colleges en workshops docent-georiënteerde en in PGO student-georiënteerde interventies plegen. Docenten moeten dus constant

switchen tussen deze interventies. Daarnaast noemden docenten factoren die hen ‘dwingen’ om docent-georiënteerde interventies te plegen. Voorbeelden zijn de manier waarop de praktijkvraagstuk is beschreven, de gedetailleerde docent-handleidingen en de testmethoden.

### **Onderzoek 3: Collectief leren, opvattingen van docenten, interventies van docenten in management en sociale opleidingen.**

Het eerste doel van deze studie is te onderzoeken in hoeverre docenten collectief leren ervaren binnen hun opleiding. Het tweede doel is te onderzoeken in welke mate een hoge perceptie van collectief leren een positieve correlatie vertoont met student-georiënteerde opvattingen en interventies en in welke mate collectief leren de discrepantie tussen opvattingen en interventies kan verkleinen. In totaal hebben 90 docenten in dit onderzoek geparticipeerd: 58 docenten van twee management opleidingen (HM en TM) en 32 docenten van twee sociale opleidingen (SW en PABO). Alle participanten vervullen de rol van PGO tutor. Van deze 90 docenten zijn 22 docenten geobserveerd (12 van de management en 10 van de sociale opleidingen).

De vragenlijst ‘Collectief leren’ (Lodders, 2013) is gebruikt om vast te stellen in welke mate docenten collectief leren ervaren binnen hun opleiding. De vier factoren van collectief leren: (1) gedeelde visie, (2) onderzoekende dialoog, (3) collectieve handelen en (4) evaluatie en reflectie, zijn opgenomen in de vragenlijst. De vragenlijst ‘Opvattingen over doceren en leren’ (Hoekstra et al., 2009) is gebruikt om opvattingen van docenten vast te stellen. Om docentgedrag vast te stellen zijn verbale interventies in één PGO sessie per docent (22) geobserveerd. Opvattingen en interventies zijn met elkaar vergeleken (zie ook onderzoek 2). Docenten zijn ingedeeld in één van de vier categorieën (inhoudsoverdrager, procesorganisator, inhoudsactivator of procesobservator) met betrekking tot hun opvattingen (op basis van gemiddelde scores) en hun gedrag (op basis van aantal verbale interventies). Deze indelingen zijn met elkaar vergeleken. Daarna is de relatie tussen collectief leren, opvattingen en gedrag en de relatie tussen collectief leren en de discrepantie tussen opvattingen en gedrag onderzocht.

Hoewel de resultaten van dit onderzoek aantonen dat docenten van beide opleidingen het meer eens zijn met student- dan met docent-georiënteerde opvattingen, demonstreerden geobserveerde docenten van beide opleidingen meer docent-georiënteerd dan student-georiënteerde interventies. Daarnaast tonen docentprofielen aan dat geobserveerde docenten de voorkeur geven aan een directieve onderwijsbenadering. Er is dus een discrepantie aangetoond tussen

opvattingen en interventies. Er zijn geen significante verschillen aangetoond tussen de beide opleidingen.

De bevindingen van dit onderzoek tonen daarnaast aan dat de docenten van sociale opleidingen een hoger niveau van collectief leren ervaren dan docenten van management opleidingen. Docenten van sociale opleidingen scoorden significant hoger op de factoren gedeelde visie en onderzoekende dialoog. Er is een positieve relatie vastgesteld tussen collectief leren en student-georiënteerde opvattingen, maar niet tussen collectief leren en student-georiënteerde interventies. Er is geen bewijs gevonden dat een hogere perceptie van collectief leren leidt tot meer eenheid in opvattingen en interventies tussen docenten van een opleiding. Er is ook geen relatie gevonden tussen collectief leren en de discrepantie tussen opvattingen en interventies.

#### **Onderzoek 4: Hoe kan een dialoog de ontwikkeling van de professionele identiteit van docenten ondersteunen? Het harmoniseren van meervoudige docent 'ik-posities'.**

Deze studie heeft als doel te onderzoeken op welke manier een dialoog docenten kan ondersteunen zich te bewegen naar een student-georiënteerde benadering van onderwijs. De Dialogische Zelf Theorie (DZT) is gebruikt om de identiteitsontwikkeling van docenten te analyseren. Volgens de DZT bestaat de professionele identiteit van de docent uit een dynamische veelheid van 'ik-posities'. 'Ik-posities' bestaan uit interne uitingen van de docent zelf en geïnternaliseerde uitingen van anderen. DZT gaat er vanuit dat de ontwikkeling van de professionele identiteit begint met een grenservaring. Een grenservaring is een ervaring waardoor de docent zich oncomfortabel voelt omdat hij/zij het moeilijk vindt om met een bepaalde situatie om te gaan. Zonder deze ervaring zal een docent minder snel geneigd zijn gedrag te veranderen. Dit heeft als gevolg dat de docent beweegt van het 'eerste verhaal naar het tweede verhaal'. In het 'eerste verhaal' articuleren docenten gefragmenteerde en niet geharmoniseerde 'ik-posities' als gevolg van grenservaringen. In het 'tweede verhaal' zijn docenten meer in staat zichzelf te observeren vanuit een meta-positie en zijn in staat om ander onderwijsgedrag te onderzoeken (promotor-positie). Een dialoog is nodig om een tweede verhaal te articuleren. Een meer specifiek doel van dit onderzoek is daarom in hoeverre een dialoog over grenservaringen docenten ondersteunt om de professionele identiteit te ontwikkelen. Vier Hotel Management docenten hebben deelgenomen aan dit onderzoek.

Er is gebruik gemaakt van een narratief onderzoeksdesign en een mix van onderzoeksmethoden. Ten eerste zijn PGO sessies van de vier docenten geobserveerd voor en na de dialoog. Ten tweede zijn zes collectieve bijeenkomsten georganiseerd waarin collectief leren centraal stond. In deze bijeenkomsten zijn de vier factoren 'gedeelde visie', 'onderzoekende dialoog', 'collectieve handelen' en 'evaluatie en reflectie' geïntegreerd. In de bijeenkomsten waarin 'onderzoekende dialoog' centraal stonden is een dialoog gevoerd over de interventies van docenten tijdens PGO. De video-episoden van de eerste PGO sessies van alle vier docenten zijn getoond en besproken. De collectieve bijeenkomsten zijn geobserveerd en van elke bijeenkomst is een transcriptie gemaakt. Ten derde, zijn individuele interviews gehouden met de docenten voor en na de collectieve bijeenkomsten. Het doel van het eerste interview was te onderzoeken hoe docenten PGO en hun rol in PGO beschrijven en was aandacht voor de interventies die docenten gepleegd hebben in de eerste geobserveerde PGO sessie. In het tweede interview is gevraagd hoe docenten het collectief leren hebben ervaren.

Docenten zijn op basis van de verbale interventies tijdens de geobserveerde PGO sessies, voor en na de collectieve bijeenkomsten, geclassificeerd als inhouds-overdrager, procesorganisator, inhoudsactivator of procesobservator. Op basis van deze observaties, transcripties van de collectieve bijeenkomsten en interviews, per docent is een 'eerste verhaal' en een 'tweede verhaal' ontwikkeld. Hierbij is gebruik gemaakt van de DZT concepten: ik-posities, meta-positie en promotor posities.

Bevindingen van dit onderzoek tonen aan dat de manier waarop de geobserveerde docenten zich positioneren afhankelijk is van de robuustheid van hun docent-georiënteerde 'ik-posities'. Docenten met sterk omschreven 'ik-posities' zagen zich zelf als bijvoorbeeld, 'hospitality expert' en uitten nauwelijks grenservaringen. Daarnaast gebruikten deze docenten meer extrinsieke factoren om hun docent-georiënteerd onderwijsgedrag te rechtvaardigen dan docenten die minder sterke 'ik-posities' uitten. Deze laatstgenoemde docenten beschreven zichzelf als, bijvoorbeeld, 'medelid van de PGO groep', beschreven meer grenservaringen en waren beter in staat zichzelf van een afstand te observeren (meta-positie). Ook bleken deze docenten meer in staat om te experimenteren met student-georiënteerde interventies.

Collectief leren wordt gezien als een stimulator voor de ontwikkeling van de professionele identiteit. Dit onderzoek heeft aangetoond dat de factor 'onderzoekende dialoog' belangrijk is voor collectief leren en dat de dialoog de geobserveerde

docenten heeft aangemoedigd hun interventies aan te passen. Docenten hebben individueel geëxperimenteerd met student-georiënteerde interventies. Collectief handelen is niet aangetoond. Observaties van de tweede PGO sessie, na de zes collectieve bijeenkomsten hebben dat het aantal interventies per docent substantieel zijn afgenomen en dat het relatieve aantal student-georiënteerde interventies zijn toegenomen. Blijkbaar heeft de dialoog docenten gestimuleerd zich meer naar een faciliterende onderwijsbenadering te bewegen.

### Conclusie vier deelonderzoeken

Het centrale doel van deze dissertatie was te *onderzoeken op welke manier docenten gefaciliteerd kunnen worden om zich bewegen naar een student-georiënteerde onderwijsbenadering?* Resultaten van dit onderzoek tonen aan dat de geobserveerde docenten inderdaad moeite hebben met de faciliterende docentstijl. Docenten hebben voornamelijk moeite met diagnosticeren en observeren van het gezamenlijke leerproces van studenten. Intrinsieke en extrinsieke factoren blijken docentinterventies te beïnvloeden. Voorbeelden van, door docenten genoemde intrinsieke factoren zijn, de manier waarop docenten hun 'ik-posities' en grenservaringen beschrijven, en in hoeverre zij in staat zijn zichzelf te observeren vanuit een meta-positie. Daarnaast blijkt dat docenten geen vertrouwen hebben in zelfsturende capaciteiten van studenten en gebrek hebben aan vertrouwen in hun eigen faciliterende begeleidingsstrategieën. Voorbeelden van extrinsieke factoren zijn de manier waarop PGO is ingebed in het curriculum (andere onderwijsvormen, beschrijven van de taken, testmethoden) en de manier waarop collectief leren is georganiseerd in een opleiding. Uit deze dissertatie blijkt dat collectief leren (inclusief de factoren gedeelde visie, onderzoekende dialoog, collectief handelen en evaluatie en reflectie) docenten ondersteunt hun professionele identiteit te ontwikkelen en te bewegen naar een student-georiënteerde onderwijsbenadering. Docenten die deel hebben genomen in de collectieve bijeenkomsten toonden een relatieve toename van de student-georiënteerde interventies. Dit betekent dat collectief leren de discrepantie tussen opvattingen en interventies kan verkleinen.

### Praktische aanbevelingen

Collectief leren kan door zowel docenten zelf als door het management van de opleiding worden geïnitieerd, zowel formeel als informeel. Aangezien docenten over het algemeen gewend zijn individueel te leren en problemen op te lossen is het belangrijk collectief leren zoveel mogelijk te stimuleren. Uit dit onderzoek is gebleken dat inbedding van de vier factoren van collectief leren (gedeelde visie, onderzoekende dialoog, collectief handelen en evalueren en reflecteren)

docenten aanmoedigt om te reflecteren op hun opvattingen. Docenten worden zich daardoor bewust in hoeverre hun interventies overeenkomen met de student-georiënteerde onderwijsbenadering. Hiervoor hebben docenten reflectieve vaardigheden nodig. Vooral docenten met robuuste docent-georiënteerde 'ik-posities' hebben meer ondersteuning nodig om te reflecteren op hun eigen onderwijsgedrag en hebben waarschijnlijk meer ondersteuning nodig om hun professionele identiteit te ontwikkelen richting een student-georiënteerd benadering van onderwijs. DZT concepten en het reflectiemodel van Korthagen en Vasalos (2010) kunnen hierbij worden gebruikt.

Het observeren van PGO sessies blijkt een cruciale factor om de dialoog over onderwijsbenadering te stimuleren. Daarom wordt aanbevolen gebruik te maken van observaties bij elkaar of met behulp van videobeelden. Docenten kunnen de vier observatiecategorieën (inhoudsoverdrager, procesorganisator, inhoudsactivator en procesobservator) gebruiken om gezamenlijk te reflecteren op interventies. Daarnaast zou 'narratieve begeleiding' door middel van storytelling, persoonlijke dagboeken, of het beschrijven van dialogen, docenten kunnen stimuleren de eigen 'ik-posities' te herkennen.

Een integrale en transparante visie op onderwijs is nodig omdat dit invloed heeft op de manier waarop de student-georiënteerde leeromgeving wordt ingebed in het curriculum. Daarom is het van belang dat standaarden worden omschreven, zoals leeruitkomsten, curriculum design, werkruimtes voor studenten en docenten, welke actieve leermethoden gebruikt worden, en welke competenties docenten nodig hebben. Management en docenten zijn sleutelfiguren in het ontwikkelen van een duidelijke visie op onderwijs. Transformationeel leiderschap blijkt een positief effect te hebben op collectief leren en stimuleert docenten te innoveren, zich committeren aan de onderwijsvisie en te experimenteren met interventies. Docenten ontwikkelen hierdoor een 'collectief tweede verhaal'. Van belang hiervoor is dat docenten zich veilig voelen en fouten mogen maken. Dit zal de leercultuur binnen een opleiding stimuleren.

### **Beperkingen van het onderzoek en suggesties voor verder onderzoek.**

De eerste beperking van dit onderzoek is gerelateerd aan het aantal participanten, vooral met betrekking tot de observaties. Daarnaast zijn alle participanten werkzaam bij één hogeschool. In verder onderzoek zouden daarom andere hogescholen betrokken kunnen worden en meer observaties moeten plaatsvinden. De tweede beperking is de manier waarop docenten zijn geclassificeerd in één van de observatiecategorieën. Docenten vertonen nooit alleen docent- of

student-georiënteerde interventies. In vervolgonderzoek zou gebruik gemaakt kunnen worden van dimensionale in plaats van categoriale docentprofielen. Gebruik van focusgroepen en observaties van docentbijeenkomsten kunnen meer inzicht geven hoe docenten collectief leren. Ook informeel leren en feedback van studenten op het onderwijsgedrag van docenten kan invloed hebben op de ontwikkeling van de professionele identiteit. Daarom zou in verder onderzoek meegenomen kunnen worden in hoeverre informeel leren en feedback van studenten invloed hebben op de transitie van het 'eerste verhaal' naar het tweede 'verhaal'.



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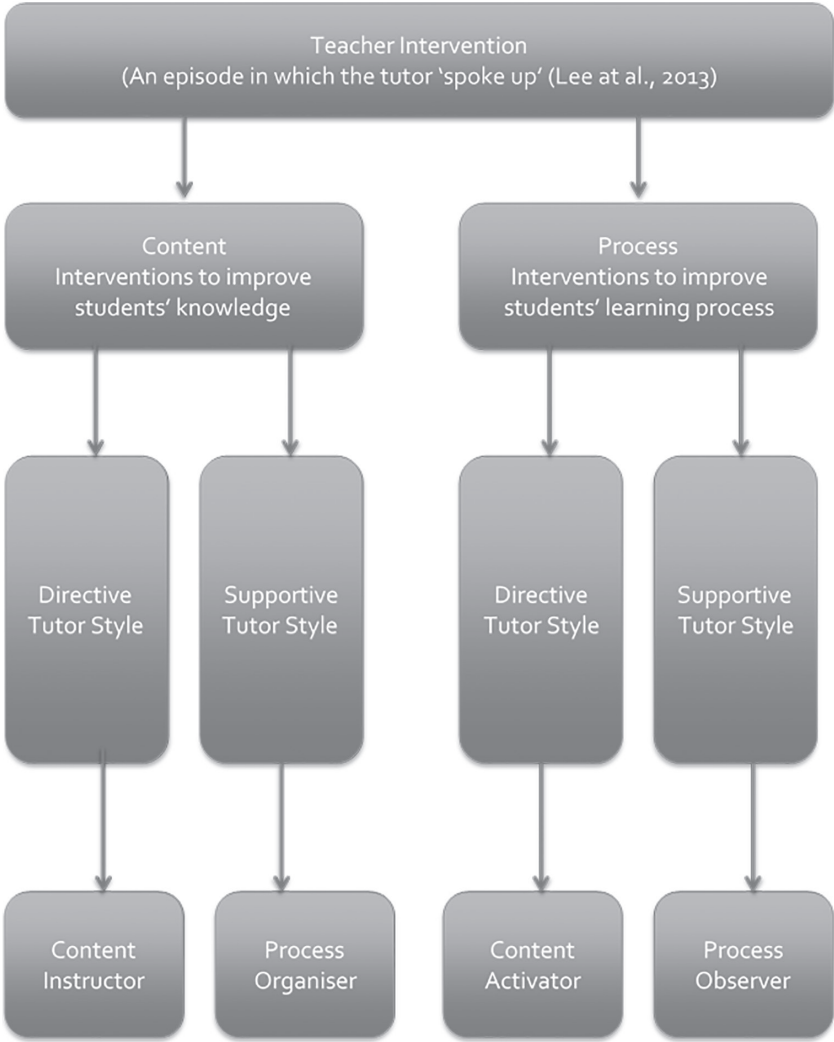
# Appendices

## Appendix A. Observation Criteria

	Teacher-oriented	Learner-Oriented
Style	Directive	Supportive
Starting phase	Tutor takes the <i>lead</i> : starts the PBL meeting.	Student takes the <i>lead</i> : starts the PBL session.
Main phase	<p>Interventions</p> <p><b>Content Instructor</b> <b>Role:</b> Information provider, dispenser of information and the ‘universal truth’. Tutor knowledge is important. <b>Aim:</b> Directing the content by transmitting information and knowledge in an ‘instructional context’. The aim is that students acquire information and remember content. <b>Activities:</b> Transmitting, teaching, presenting, clarifying, explaining, informing, instructing, adding, offering, telling, defining, indicating, pointing out, revealing, controlling, checking, conveying, answering.</p> <p><b>Progress Organiser</b> <b>Role:</b> Process leader, chairing the process <b>Aim:</b> Directing the process by structuring and leading the learning process in an effective and efficient instructional way. The aim is that students structure the process. <b>Activities:</b> Leading, chairing, structuring, explaining, directing, focusing, involving, inciting, planning, suggesting, pushing, addressing, reassuring.</p>	<p>Interventions</p> <p><b>Content Activator</b> <b>Role:</b> Facilitator and activator of students’ critical thinking process. <b>Aim:</b> Supporting the content and bringing conceptual change by stimulating meaningful experiences and stimulating critical thinking. The aim is that students make sense of concepts and develop concepts. <b>Activities:</b> Challenging, activating, stimulating, motivating, encouraging, experimenting, scaffolding, exploring, developing, constructing, connecting, experiencing, modelling, critical thinking, participating, engaging, involving, integrating, rethinking, reasoning, elaborating, dialoguing, questioning assumptions.</p> <p><b>Process Observer</b> <b>Role:</b> Evaluator and observer of the group learning process <b>Aim:</b> Supporting the process by observing and evaluating group learning process in an affective way. The aim is that students reflect on their own learning process. <b>Activities:</b> Observing, evaluating, diagnosing, monitoring, reflecting (individual and group process), and creating an affective climate.</p>
Evaluation phase	Tutor gives feedback, specifically on individual performance	Tutor stimulates students to evaluate the group process and stimulates students to give each other constructive feedback (on group performance)



**Appendix B.     Flowchart Classification of Teacher Interventions**





**Appendix C. Examples of Learner-oriented Interventions**  
**(based on Barrett & Moore, 2011, p.125)**

Interventions	Teacher asks open questions
Content Activator	<p><b>Role:</b> Facilitator and stimulator of students' critical thinking process.</p> <ul style="list-style-type: none"> <li>– Have you seen or experienced anything like this before? Can you give examples?</li> <li>– What are the key concepts of this problem?</li> <li>– Can you explain the key concepts in your own words?</li> <li>– How do these key concepts connect?</li> <li>– How does your input connect with the input of other students?</li> <li>– Can you describe the evidence for your arguments?</li> <li>– What could be the counterarguments?</li> <li>– What other factors are important?</li> <li>– What are the social, cultural and political issues to consider?</li> <li>– Which keywords did you use to find information, how do you know your references are suitable for this case? What other references did you use?</li> <li>– How would you solve this in practice?</li> <li>– What do you know about the practice in our country and other countries?</li> <li>– What is the most important thing to do to solve the case?</li> <li>– What do you think is the most difficult to do in practice?</li> <li>– Are you able to demonstrate how that would work in practice?</li> <li>– Can you explain in own words what your learned from this case?</li> </ul>
Process Observer	<p><b>Role:</b> Evaluator and observer of the group learning process.</p> <ul style="list-style-type: none"> <li>– How is your understanding of the case influenced by the contributions of other students?</li> <li>– Are contributions of all students taken into account?</li> <li>– Explain how you use each other's expertise.</li> <li>– What was your contribution during the learning process? What happened?</li> <li>– Which actions did you take? What were the reasons behind these actions?</li> <li>– Can you explain your observations?</li> <li>– What was your role during the process? What was the role of others?</li> <li>– Did you understand the input of others and if not did you ask for clarification? Can you explain why you did ask or did not asked for clarification?</li> <li>– How do you feel about the PBL process?</li> <li>– What is your feeling about the collaborative process?</li> <li>– Explain to what extent you feel trust to ask questions to other students?</li> </ul>

## Appendix D. Overview ProblemBased Learning and Design Based Education

	Problem-based Learning PBL	Design-based Education DBE
<b>Vision on education</b>	Social constructivism Student-centred approach to teaching	Social constructivism <i>The university does not choose for a traditional approach to teaching (teaching and transmission of knowledge).</i> Student-centred approach to teaching Students are able to direct their own learning process based on their own questions, needs and desires.
<b>Learning principles</b>	Self-directed Contextual Constructive Collaborative	Self-directed Contextual Constructive Collaborative Learning is a process in which students actively construct knowledge collaboratively based on real-life cases. Students build their knowledge based on prior knowledge and experiences.
<b>Learning environment</b>	Practice drive (real life scenarios) Question driven Dialogue driven	Practice driven (starting point real-life scenarios) Question driven Dialogical learning processes (students and teachers) and 'trialogical' process (students, teachers and representatives professional work field).
<b>Module structure</b>	Thematic Interdisciplinary (various disciplines within the programme) Core elements working in small groups Thematic, interdisciplinary Emphasis on skills training Attitude development	Thematic Multidisciplinary (various disciplines also from other university programmes). Experimenting, creativity, out of the box thinking, prototyping.
<b>Tool to structure the learning process</b>	A linear process with a seven-step procedure. <i>Step 1:</i> students read the problem and clarify words and concepts they do not understand. <i>Step 2:</i> students define and formulate a problem statement. <i>Step 3:</i> students discuss and analyse the problem using various analysing methods. <i>Step 4:</i> students identify possible explanations and solutions for the problem.	An iterative process with a six steps (not linear) procedure. <i>Step 1:</i> students understand the question derived from real-life case. <i>Step 2:</i> Students formulate the central question based on knowledge (after theoretical deepening). <i>Step 3:</i> Students generate ideas. <i>Step 4:</i> Students develop a design or prototype (based on assumptions and theories). <i>Step 5:</i> Students apply.

**Appendix D. (continued)**

	<b>Problem-based Learning PBL</b>	<b>Design-based Education DBE</b>
	<p><i>Step 5:</i> students determine what knowledge and skills are still lacking and based on this they formulate learning objectives.</p> <p><i>Step 6:</i> during self-study students select and study sources with the goal to report the relevant information needed to answer the learning objectives.</p> <p><i>Step 7:</i> students construct knowledge based on the individual contributions of all students.</p>	<p><i>Step 6:</i> Students evaluate the developed design prototype (the consequences, the assumptions).</p>
<b>Organi- sational aspects</b>	<ul style="list-style-type: none"><li>– Students meet twice a week</li><li>– Group of 12 students</li><li>– Hybrid PBL (Savin-Baden, 2000). Lectures and workshops are provided next to the two scheduled PBL sessions and provide students with information to solve the problems during the PBL sessions.</li><li>– First year structured PBL session (seven-step procedure obligatory).</li></ul>	<ul style="list-style-type: none"><li>– Students are a part of a learning community. Students are part of a basic group of 24 students in an, so-called ‘ateliers’. An atelier is a physical work place where teachers and students meet each other. Students work together with other students and teachers on real-life cases.</li><li>– Depending on the educational activity, students work in groups of 4, 7 or 12 students.</li><li>– At least 40% of the curriculum is based on Design Based Education. (From simple curriculum 40% to a complex curriculum 80%-100% of the curriculum. From a simple DBE curriculum partly (teachers direct the learning process, problems of the work field are structured, clear problems, thematic, all educational activities are related to the theme) to a complex DBE curriculum (learning outcomes direct the learning process, open/ real-life problems, complex problems, integrated in one semester).</li><li>– Students work together with other students and teachers on real-life questions during a couple of days or half-days per week. In the first two years at school (in the ateliers within the individual programmes) and in year 3 and 4 also with other programmes (multidisciplinary) and with the professional work field.</li><li>– Each programme offers a multi programme module in which multidisciplinary disciplines are involved (a minimum of 30 EC).</li></ul>

**Appendix D.     (continued)**

	<b>Problem-based Learning PBL</b>	<b>Design-based Education DBE</b>
<b>Student role</b>	Active student role who is capable to self-direct his or her learning process.	Active student role who is capable to self-direct his or her learning process.
<b>Teacher role</b>	Lecturer plays a crucial role as an expert both in terms of content, as well as the teaching and learning process, as a learning facilitator, and as role model.	Teachers facilitate the students' learning process. Teachers will be trained to become experts in DBE.

# Curriculum Vitae



Hanneke Assen was born on December 17, 1965 in Avereest, The Netherlands. After she completed secondary school, which she attended in Tubbergen and Almelo, she went to Leeuwarden to study. She graduated at Stichting Lerarenopleiding Ubbo Emmius with a Bachelor degree in Health Sciences in Leeuwarden and with a Bachelor degree in Business Economics in Groningen (both secondary school teacher qualification).

Hanneke has more than 25 years of experience as a lecturer. From 1992 to 1993 she worked at several secondary schools. In 1994, she started as a senior lecturer Business Economics at the NHL Stenden University Applied Sciences (formerly called Christelijke Hogeschool Nederland and Stenden University of Applied Sciences). At this university she came in contact with problem-based learning (PBL). She also participated in various committees and projects, for instance, she was coordinator of the Pro-HHO (a combination of hospitality vocational and bachelor degree study), coordinator of the career development programme, was chair of the curriculum committee and member of the exam committee. As coordinator of the career development programme she took the initiative to develop learning communities ('houses') in which students and lecturers (coaches) worked in a practice-, question- and dialogue driven environment.

In 2009 Hanneke started with the master's programme Learning and Innovation at Stenden University of Applied Sciences. Her master thesis focused on the dialogue in education, specifically to what extent there is a (career) dialogue between students and career coaches. She graduated cum laude. This master's thesis can be seen as the groundwork for her PhD research. In 2013 she began as a PhD candidate at Tilburg University.

Next to her work as a lecturer, Hanneke was engaged in a project for disabled children. She was chair from 2004 to 2009 of 'Stichting It Lijsket'. In this project parents of disabled children took the initiative to 'build a house' for their children.

Currently Hanneke is senior research lecturer at NHL Stenden University of Applied Sciences. She is member of the research group Sustainable Educational Concepts in Higher Education.

The complex and rapid changes in future professions ask for independent employees who are able to demonstrate lifelong learning, conceptual, analytical, interpersonal and collaborative competencies. Universities are challenged to design learning environments that facilitate students to develop these competencies. A learner-oriented approach to teaching is based on self-directed, constructive, contextual and collaborative learning principles. In a learner-oriented learning environment, students have more opportunities to acquire the needed competencies than in a conventional (teacher-oriented) learning environment.

A learner-oriented approach requires another teaching behaviour than a teacher-oriented approach. Teachers are expected to take on a supportive role of activator, facilitator and evaluator of the students' learning process. The present study took place at a University of Applied Sciences, which opted for a learner-oriented approach to teaching. Most teachers at this university appear to 'struggle' with learner-oriented teaching strategies. It seems that teachers easily fall back on teacher-oriented teaching strategies.

The main purpose of this research is to explore to what extent teachers can be facilitated in moving towards a supportive teaching style. The research aims to investigate to what extent teachers' beliefs about teaching and learning and teacher interventions in educational activities are in line with the learner-oriented approach to teaching and aims to explain the discrepancy between teacher beliefs and interventions. In addition, this research aims to explore to what extent the four factors of the collective learning process (shared vision, inquisitive dialogue, collective action and evaluation and reflection), support teachers to develop their professional identity and to move to a learner-oriented approach to teaching. Teachers shape their professional identities and give meaning to their teaching experiences using narratives. The Dialogical Self Theory is used to analyse these narratives.



**Hanneke Assen** is senior lecturer at NHL Stenden University of Applied Sciences.